ZS-XN30

SERVICE MANUAL

Ver. 1.1 2004.12

US Model
Canadian Model
E Model

US and foreign patents licensed from Dolby Laboratories.

Model Name Using Similar Mechanism	NEW
Optical Pick-up Block Name	KSM-213RAP
Optical Pick-up Name	KSS-213R

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US model only)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 3.2-ohm loads, both channels driven from 100 - 10,000 Hz; rated 1.7 W per channel-minimum RMS power, with no more than 10 % total harmonic distortion in AC operation.

Other Specifications

CD player section

System
Compact disc digital audio system
Laser diode properties
Material: GaAlAs
Wave length: 780 nm
Emission duration: Continuous
Laser output: Less than 44.6 µW
(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)
Spindle speed
400 r/min (rpm) to 1 000 r/min (rpm) (CLV)
Number of channels
2
Frequency response
20 - 20 000 Hz +0/–1 dB
Wow and flutter
Below measurable limit

Radio section

Frequency range
FM: 87.5 - 108 MHz
AM: 530 - 1 710 kHz
Antennas
FM: Telescopic antenna
AM: Built-in ferrite bar antenna

General

Speaker
Full range: 8 cm (3 ¼ in.) dia., 3.2 Ω, cone type (2)
Passive radiator: 8 cm (3 ¼ in.) dia. (2)
Output
Headphones jack (stereo minijack):
For 16 - 64 Ω impedance headphones
Power output
2.3 W + 2.3 W (at 3.2 Ω, 10 % harmonic distortion)
Power requirements
DC IN 9V jack accepts:
Supplied AC power adaptor for use with 120 V AC, 60 Hz
9 V DC, 6 size C (R14) batteries
Battery life

CD playback
Sony R14P: approx. 2 h
Sony alkaline LR14: approx. 8 h
Radio reception
Sony R14P: approx. 23 h
Sony alkaline LR14: approx. 45 h

Dimensions
Approx. 511 × 154 × 244 mm (w/h/d) (20 ⅛ × 6 ⅛ × 9 ⅝ inches) (incl. projecting parts)
Mass
Approx. 3.2 kg (7 lb. 1 oz) (incl. batteries)
Supplied accessories
AC power adaptor (1)
CD-ROM (SonicStage 2.0) (1)
SonicStage 2.0 Installation/Operating Guide (1)

Design and specifications are subject to change without notice.

PERSONAL AUDIO SYSTEM

9-877-632-02
2004L05-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

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CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located at the bottom.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

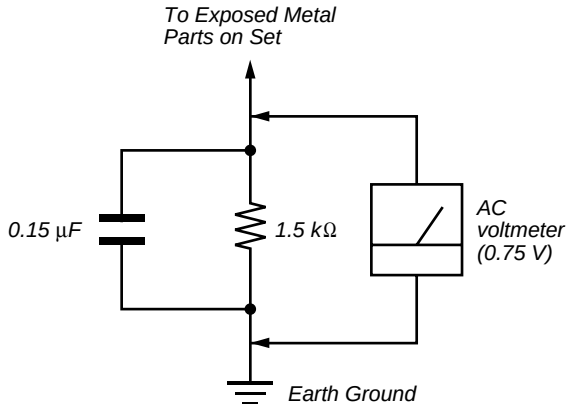


Fig. A. Using an AC voltmeter to check AC leakage.

About CD-Rs/CD-RWs

This CD player can play CD-Rs/CD-RWs recorded in the ATRAC3plus/ATRAC3, MP3 or CDDA* format, but playback capability may vary depending on the quality of the disc and the condition of the recording device.

* CDDA is the abbreviation for Compact Disc Digital Audio. It is a recording standard used for the Audio CDs.

Note

Use only the supplied AC power adaptor. Do not use any other AC power adaptor.

Polarity of the plug

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning ON the S801. (push switch type)
The following checking method for the laser diode is operable.

- **Method**

  Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S801 as shown in Fig.1.

Note: Do not push the detection lever strongly, or it may be bent or damaged.

3. Press the [▶II] button.
4. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up.
   In this operation, the object lens will move up and down 2 times along with inward motion for the focus search.

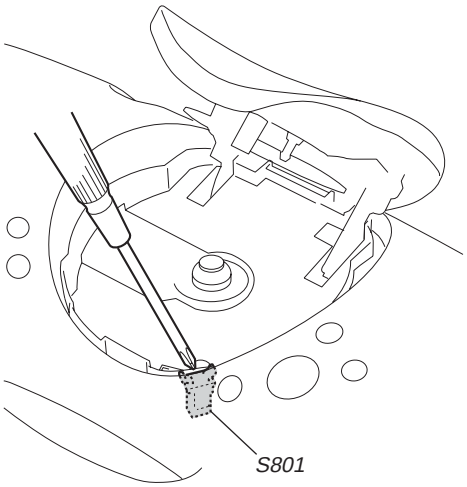
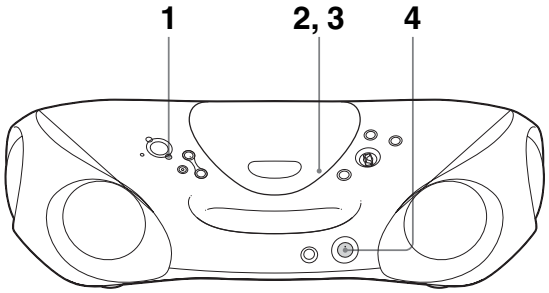


Fig.1 Method to push the S801

SECTION 2
GENERAL

This section is extracted from instruction manual.

Playing a CD



Connect the supplied AC power adaptor.

1

Press CD (direct power-on).

2

Press ⏏ PUSH down to open the CD compartment and place the CD on the CD compartment.

Note

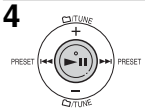
When opening/closing the CD compartment, place the player on a level surface and then press ⏏ PUSH down.

With the label side up

3

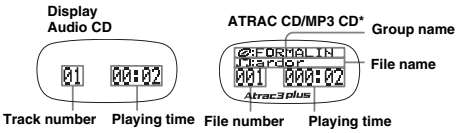
Close the lid of the CD compartment.

4



Press ▶II.

The player plays all the tracks once.



* When playing an MP3 CD, ÒMP3Ó appears in the display.

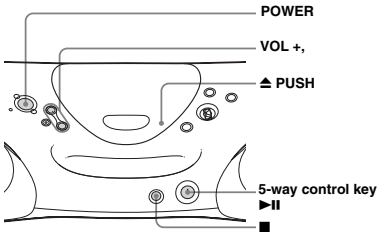
Note

Before playing an ATRAC CD/MP3 CD, this player reads all file and group information on the CD. Depending on the file structure, it may take more than a minute to read them. During this time, ÒReadingÓ is displayed.

Tip

Playback starts from the point you last stopped playing (Resume play). During stop, the point to be played is displayed.
To cancel the resume play to start play from the beginning of the first track, press ■ in stop mode.

Use these buttons for additional operations



To	Do this
adjust the volume	Press VOL +*1, .
stop playback	Press ■.
pause playback	Press ▶II*1. Press the button again to resume play after pause.
go to the next track	Push the 5-way control key toward ▶▶I.
go back to the previous track	Push the 5-way control key toward I◀◀.

*1 The button has a tactile dot.

To	Do this
select a group*2	Push the 5-way control key toward 🗀 + to go forward and 🗀 to go backward.
select a file*2	Push the 5-way control key toward ▶▶I to go forward and I◀◀ to go backward.
remove the CD	Press ⏏ PUSH*3.
turn on/off the player	Press POWER.

*2 You can operate during play of ATRAC CDs/MP3 CDs.

*3 Once you open the CD compartment, the track to start play will change to the beginning of the first track.

About ESP (Electronic Shock Protection) function

When a CD is playing, the ESP function is always activated. The ESP function prevents the sound from skipping by using a buffer memory that stores music data for about 10 seconds.

The structure of ATRAC CDs/MP3 CDs

ATRAC CDs/MP3 CDs consist of ÒfilesÓand Ògroups.ÓA ÒfileÓis equivalent to a ÒtrackÓof an audio CD. A ÒgroupÓ is a bundle of files and is equivalent to an Òalbum.Ó

For MP3 CDs, this CD player recognizes an MP3 folder as a ÒgroupÓso that ATRAC CDs and MP3 CDs can be operated in the same way.

Notes

If ATRAC3plus/ATRAC3 files and MP3 files are recorded on the same CD, this CD player plays the ATRAC3plus/ATRAC3 only.

The playback capability of this CD player may vary depending on the quality of the disc and the condition of the recording device.

Acceptable characters on this CD player are as follows:

A to Z
a to z
0 to 9
! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ { | } ~

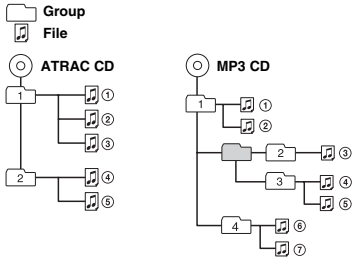
If you use other characters on you computer by using an software such as SonicStage, they are displayed as Ò ÓÓon this CD player.

On a disc that has ATRAC3plus/ATRAC3/ MP3 files, do not save files in other formats and do not make unneccessary groups.

Playing order of ATRAC CDs and MP3 CDs

For ATRAC CDs, files are played in the order selected in SonicStage.

For MP3 CDs, the playing order may differ depending on the method used to record MP3 files on the disc. In the following example, files are played in order of ① to ⑦.



Notes on ATRAC CDs

Maximum number of groups: 255
Maximum number of files: 999

CD-Rs/CD-RWs recorded in the ATRAC3plus/ATRAC3 format cannot be played on your computer.

Notes on MP3 CDs

Maximum number of groups: 100
Maximum number of files: 400
Maximum directory level: 8

A group that does not include an MP3 file is skipped.

Be sure to add the file extension Ònp3Óto the file name. However, if you add the file extension Ònp3Óto a file other than an MP3 file, the player will not be able to recognize the file properly.

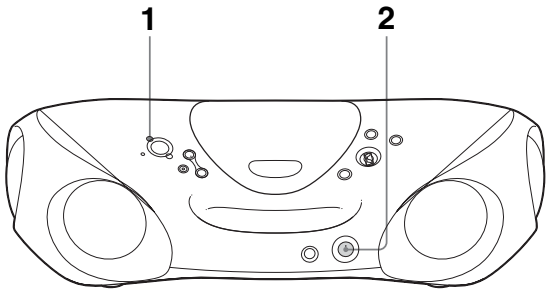
This player can play bit rates of 16 to 320 kbps, and sampling frequencies of 32/44.1/ 48 kHz. Variable Bit Rate (VBR) file can also be played.

To compress a source in an MP3 file, we recommend setting the compression parameters to Ò44.1 kHz,ÓÒ128 kbps,Óand ÒConstant Bit Rate.Ó

To record up to the maximum capacity, set the writing software to Òhalting of writing.Ó

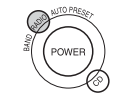
To record to the maximum capacity at one time up on media that has nothing recorded on it, set the writing software to ÒDisc at Once.Ó

Listening to the radio



Connect the supplied AC power adaptor.

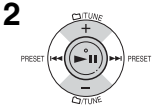
1



Press RADIO BAND AUTO PRESET until the band you want appears in the display (direct power-on).

Display

2



Push the 5-way control key toward TUNE + or TUNE − and hold it until the frequency digits begin to change in the display.

The player automatically scans the radio frequencies and stops when it finds a clear station.

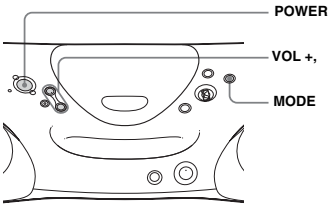
If you can't tune in a station, push the 5-way control key toward TUNE + or TUNE − repeatedly to change the frequency step by step.

Indicates an FM stereo broadcast

Tip

If the FM broadcast is noisy, press MODE until "Mono" appears in the display and radio will play in monaural.

Use these buttons for additional operations

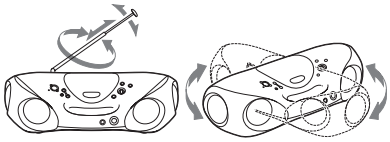


To	Press
adjust the volume	VOL +*,
turn on/off the radio	POWER

*VOL + has a tactile dot.

To improve broadcast reception

Reorient the antenna for FM. Reorient the player itself for AM.

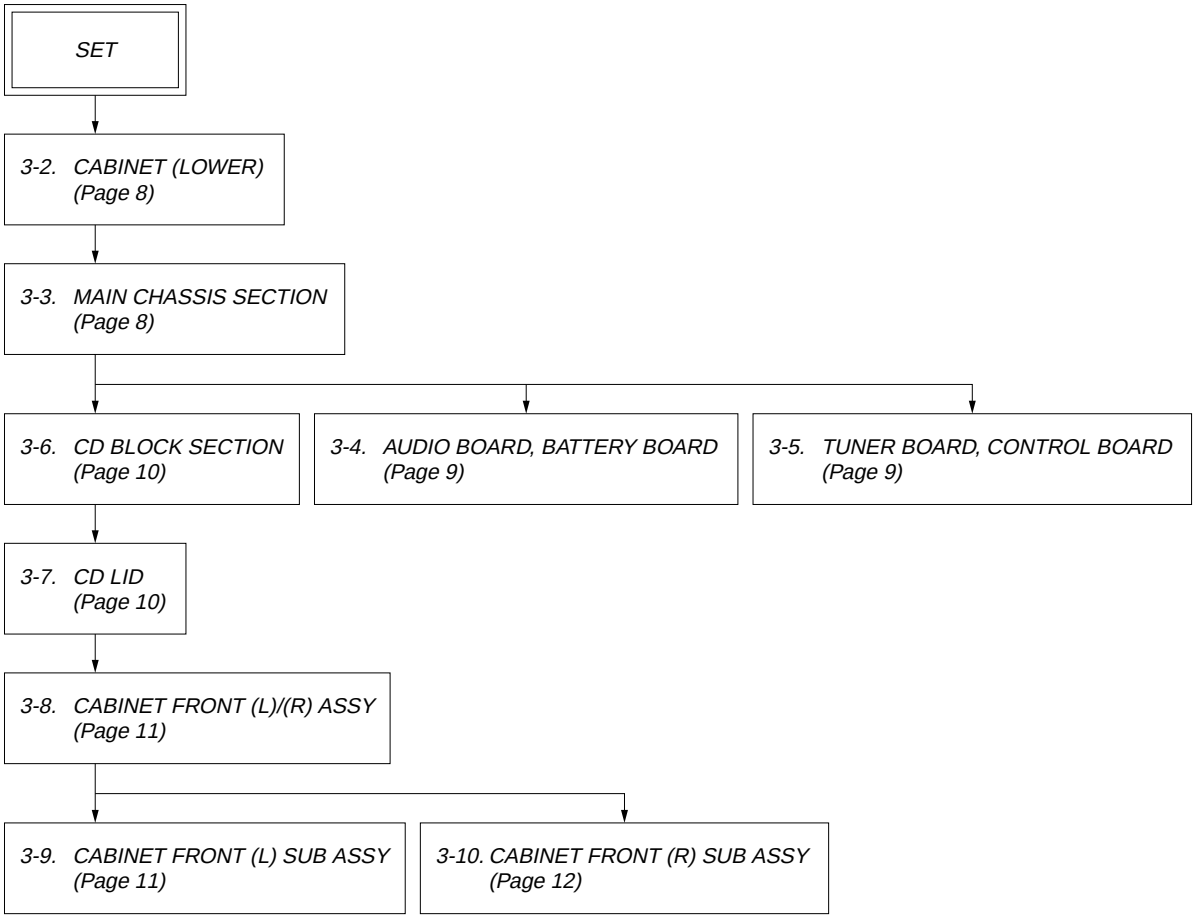


for FM **for AM**

SECTION 3
DISASSEMBLY

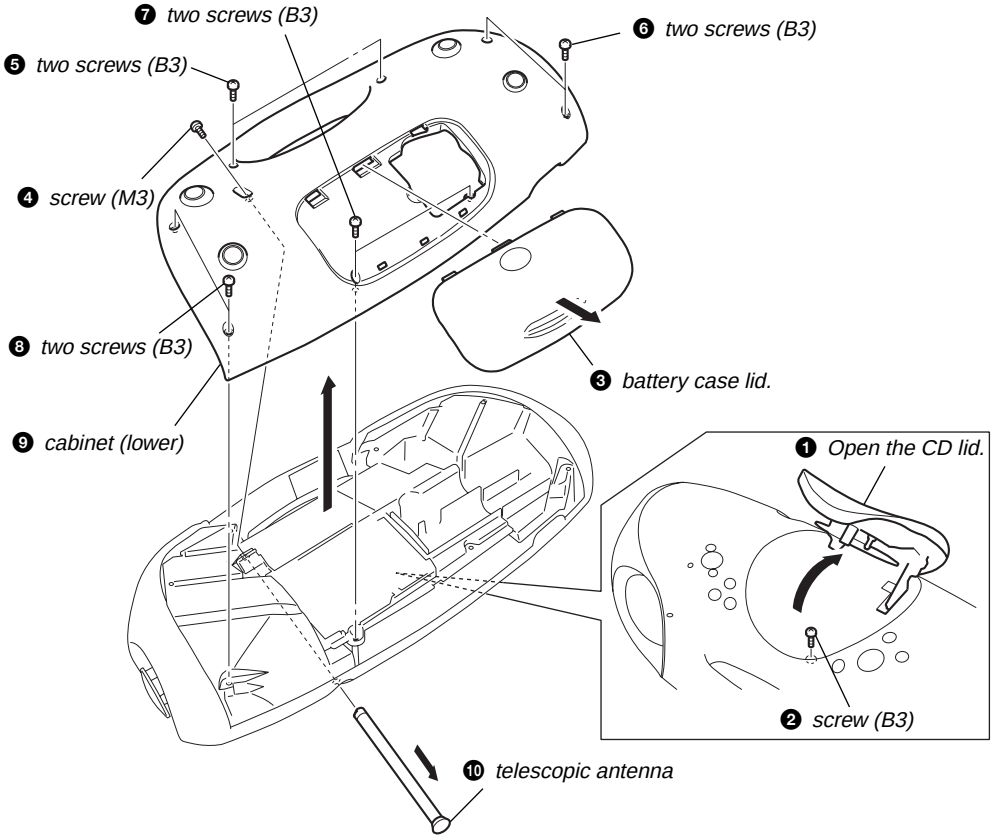
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

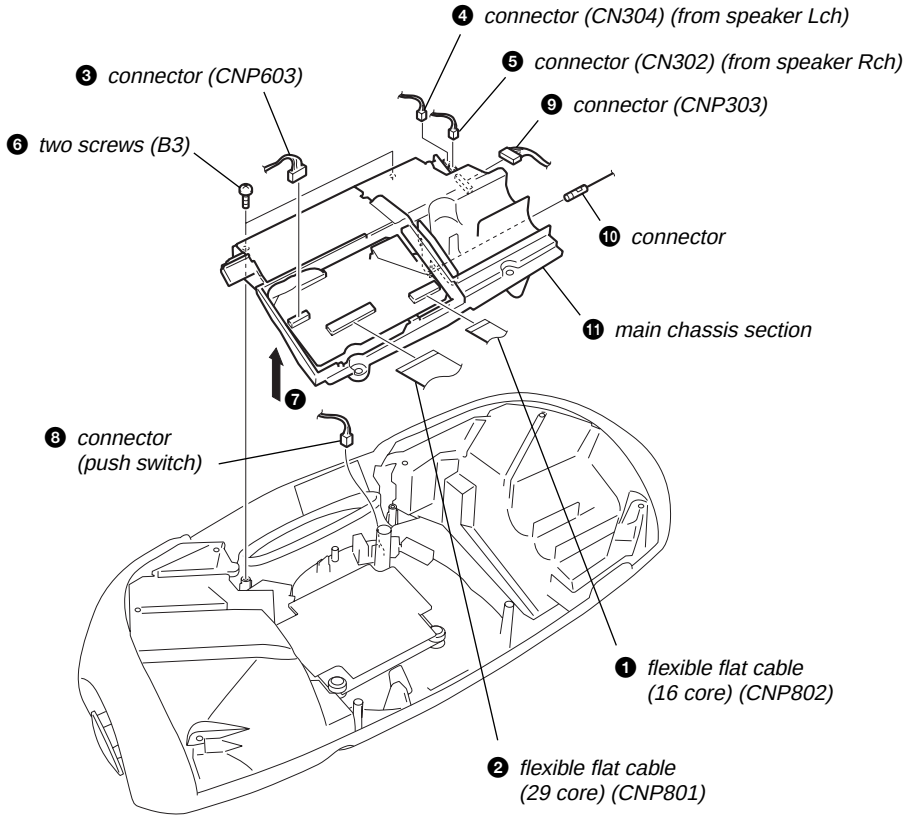

SET
3-2. CABINET (LOWER) (Page 8)
3-3. MAIN CHASSIS SECTION (Page 8)
3-6. CD BLOCK SECTION (Page 10)
3-4. AUDIO BOARD, BATTERY BOARD (Page 9)
3-5. TUNER BOARD, CONTROL BOARD (Page 9)
3-7. CD LID (Page 10)
3-8. CABINET FRONT (L)/(R) ASSY (Page 11)
3-9. CABINET FRONT (L) SUB ASSY (Page 11)
3-10. CABINET FRONT (R) SUB ASSY (Page 12)

Note: Follow the disassembly procedure in the numerical order given.

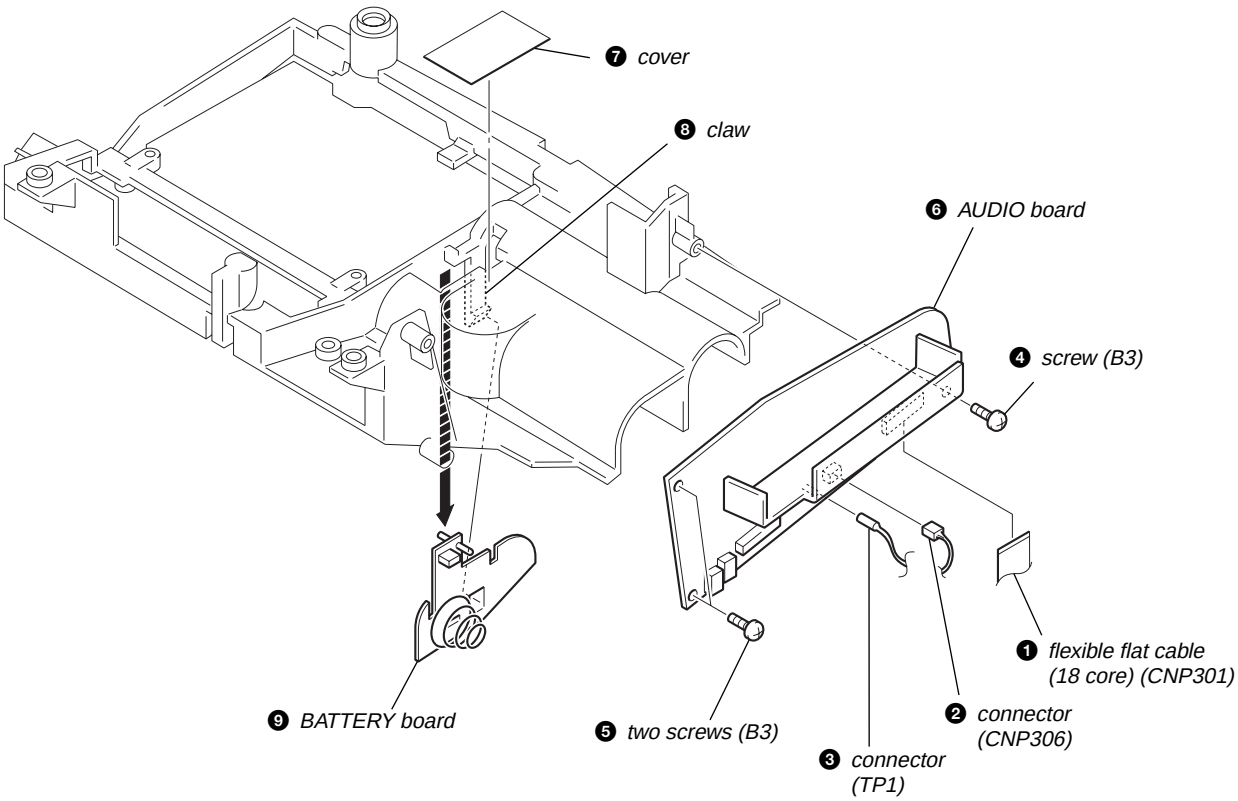
3-2. CABINET (LOWER)



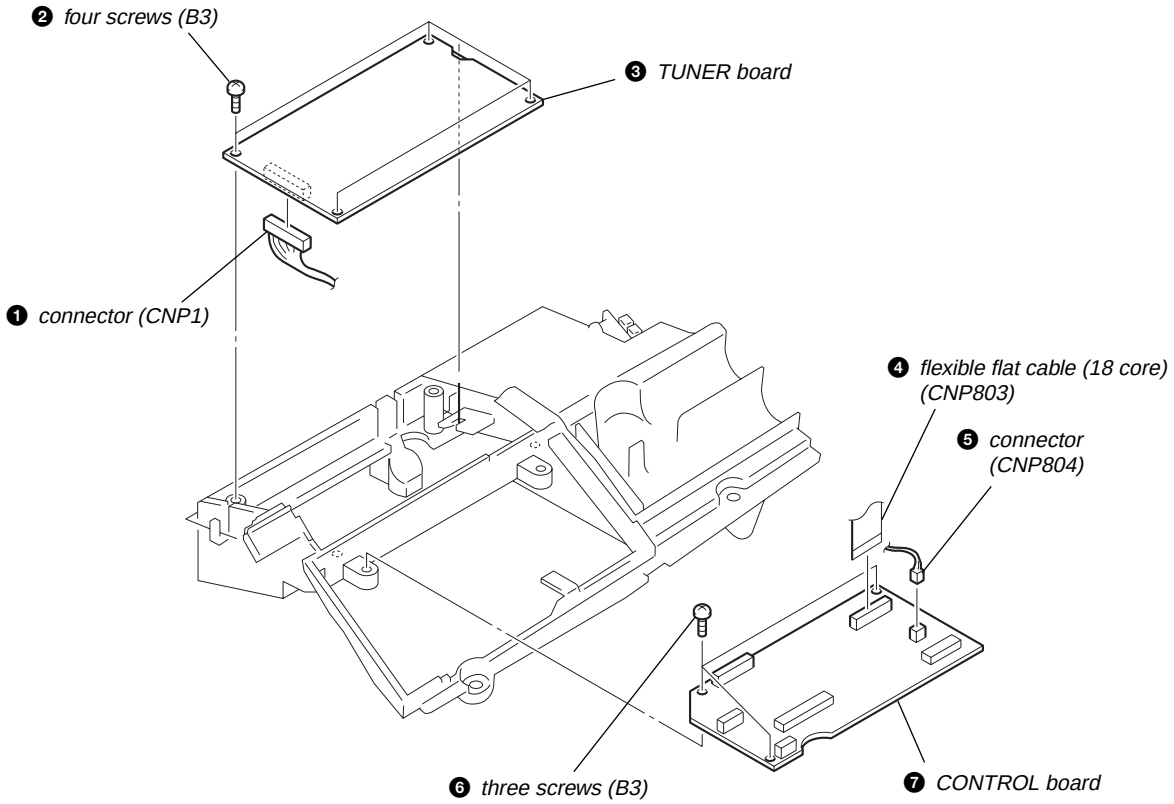
3-3. MAIN CHASSIS SECTION



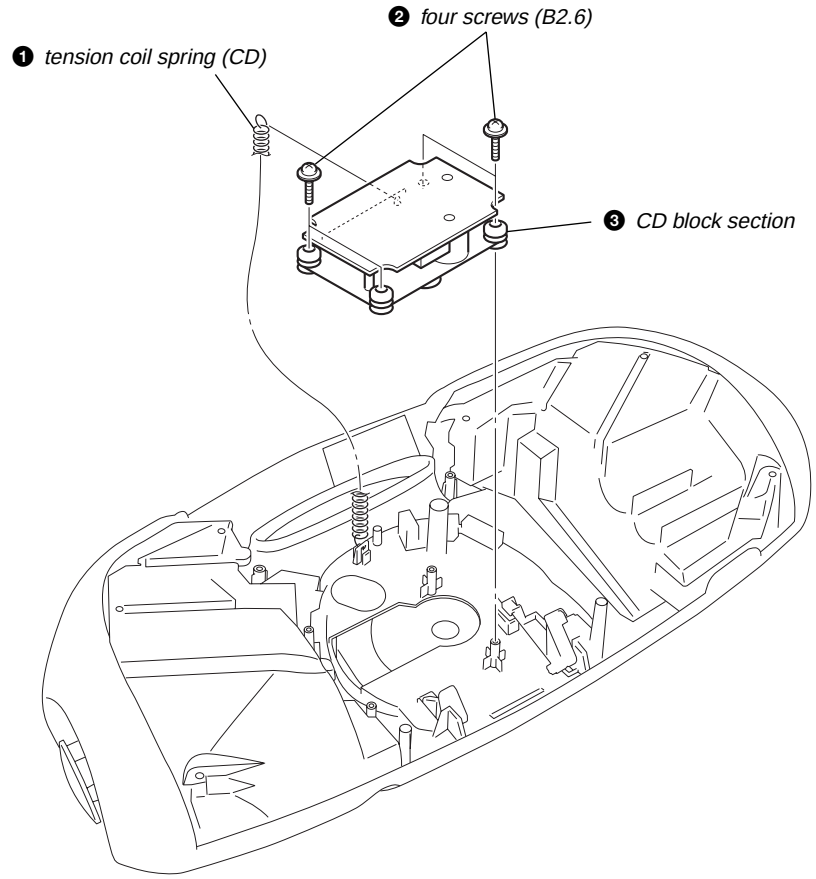
3-4. AUDIO BOARD, BATTERY BOARD



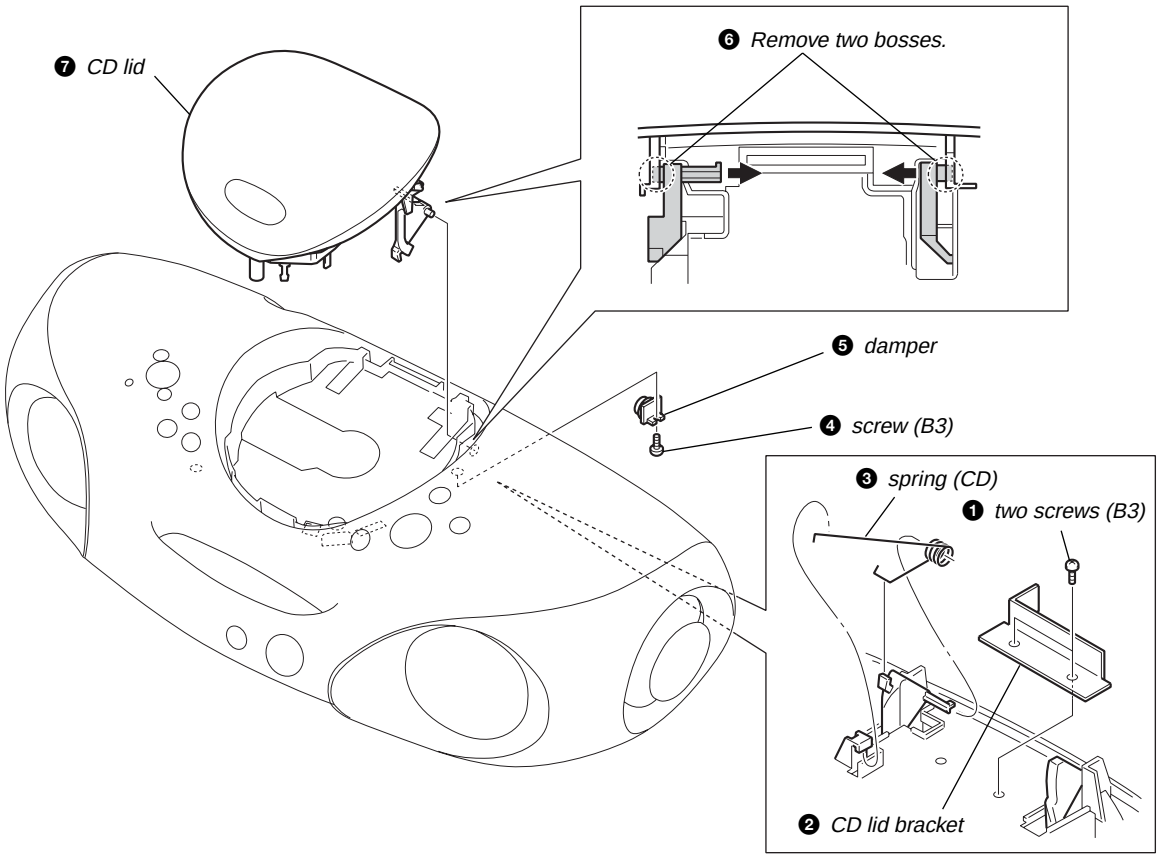
3-5. TUNER BOARD, CONTROL BOARD



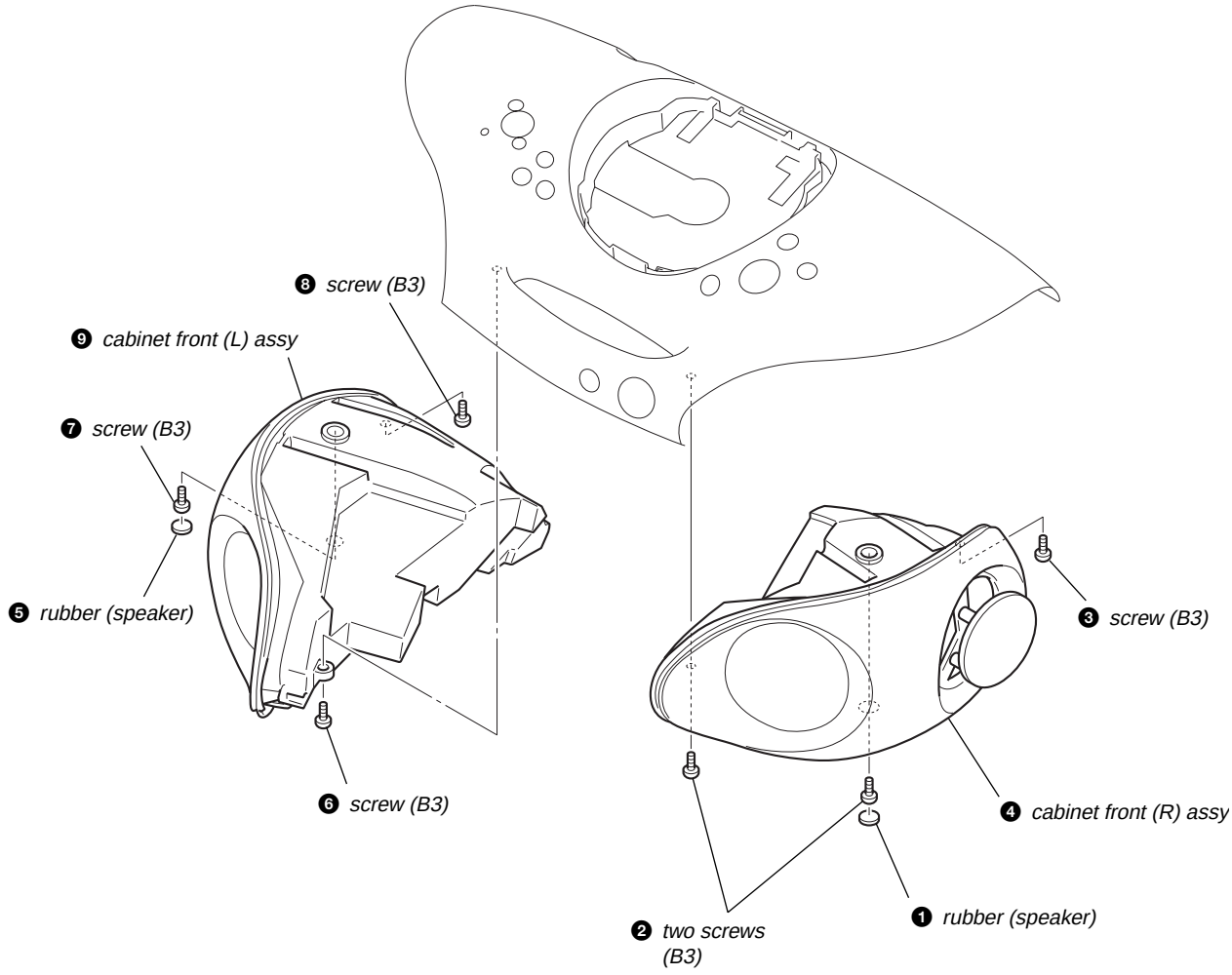
3-6. CD BLOCK SECTION



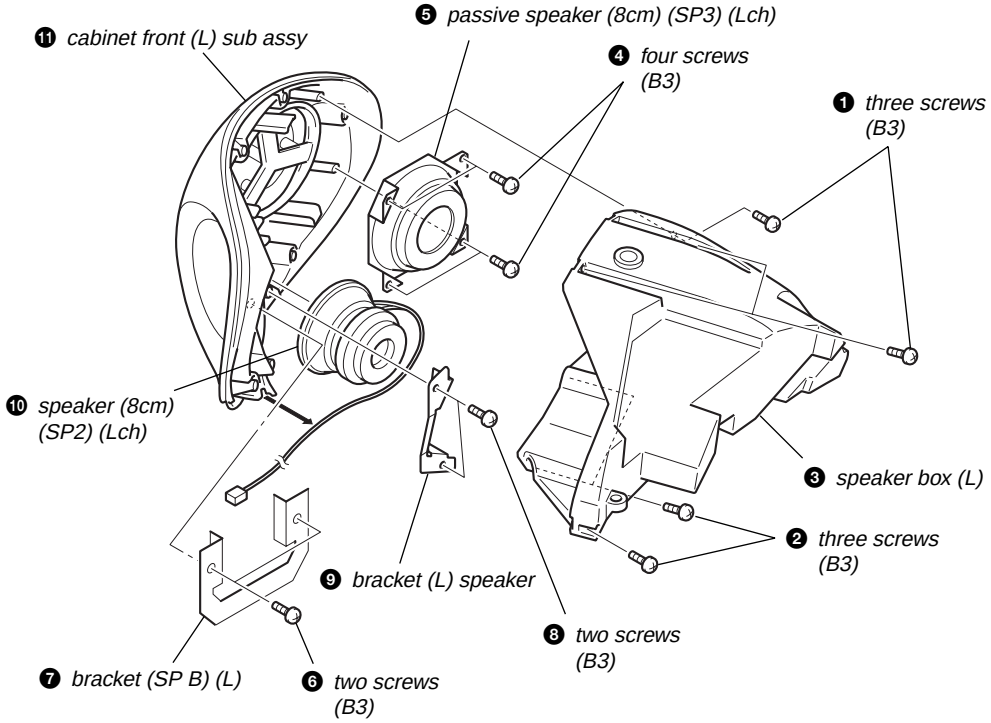
3-7. CD LID



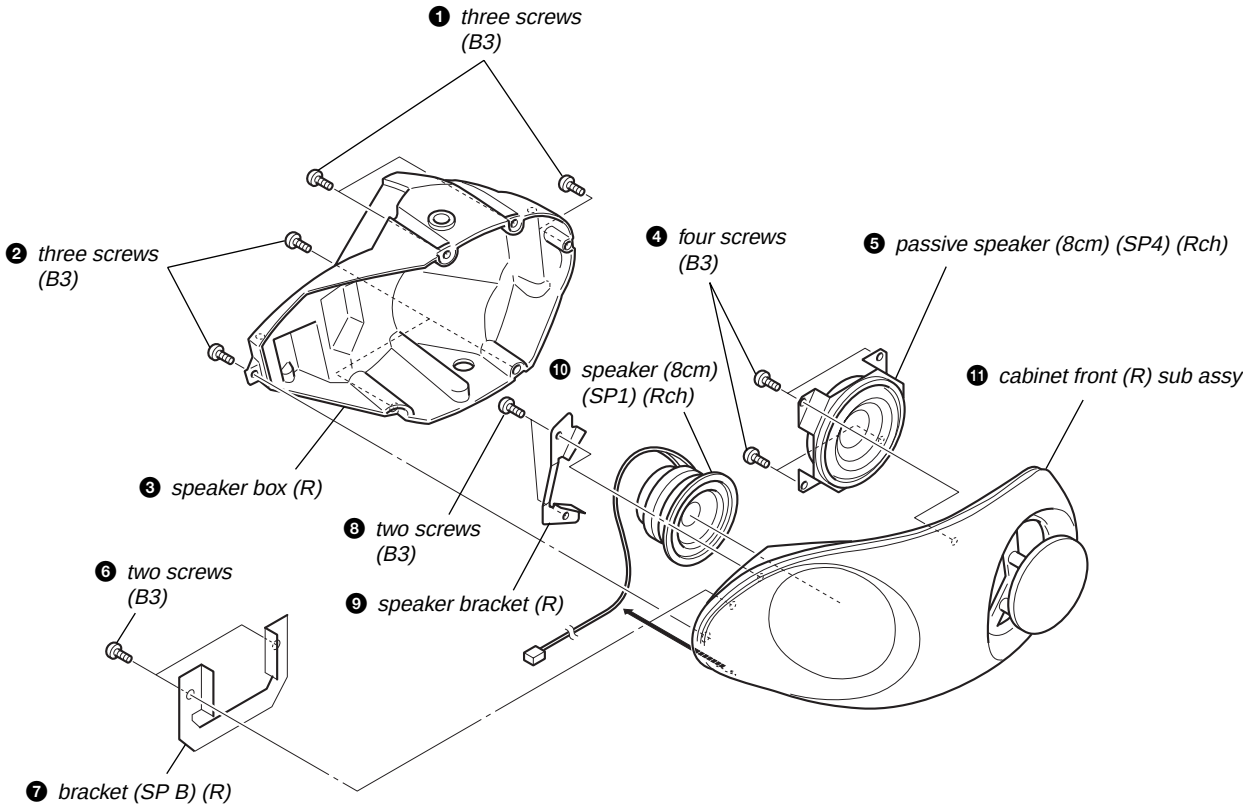
3-8. CABINET FRONT (L)/(R) ASSY



3-9. CABINET FRONT (L) SUB ASSY


❺ passive speaker (8cm) (SP3) (Lch)
⓫ cabinet front (L) sub assy
❹ four screws (B3)
❶ three screws (B3)
❿ speaker (8cm) (SP2) (Lch)
❸ speaker box (L)
❷ three screws (B3)
❾ bracket (L) speaker
❽ two screws (B3)
❼ bracket (SP B) (L)
❻ two screws (B3)

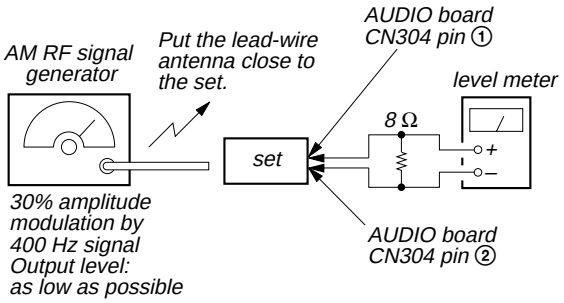
3-10. CABINET FRONT (R) SUB ASSY


❶ three screws (B3)
❷ three screws (B3)
❸ speaker box (R)
❹ four screws (B3)
❺ passive speaker (8cm) (SP4) (Rch)
❻ two screws (B3)
❼ bracket (SP B) (R)
❽ two screws (B3)
❾ speaker bracket (R)
❿ speaker (8cm) (SP1) (Rch)
⓫ cabinet front (R) sub assy

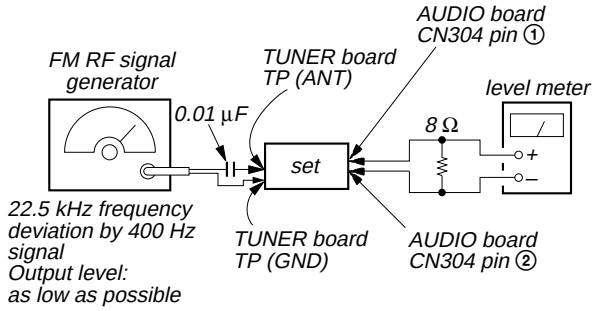
SECTION 4
ELECTRICAL ADJUSTMENTS

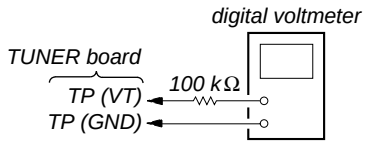
TUNER SECTION | 0 dB=1 μV

[AM]
Setting:
Function: RADIO
Band: AM



[FM/TV/WEATHER]
Setting:
Function: RADIO
BAND button: FM





- Repeat the procedures in each adjustment several times, and the tracking adjustments should be finally done by the trimmer capacitors.
- Remove FM antenna in FM adjustment.

AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter	
T1	450 kHz

AM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
L4	530 kHz	1.0 ± 0.05 V
Confirmation	1,710 kHz	5.3 ± 0.7 V

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L3	620 kHz
CT3	1,400 kHz

FM IF ADJUSTMENT	
Adjust for a minimum reading on level meter	
T2	10.7 MHz

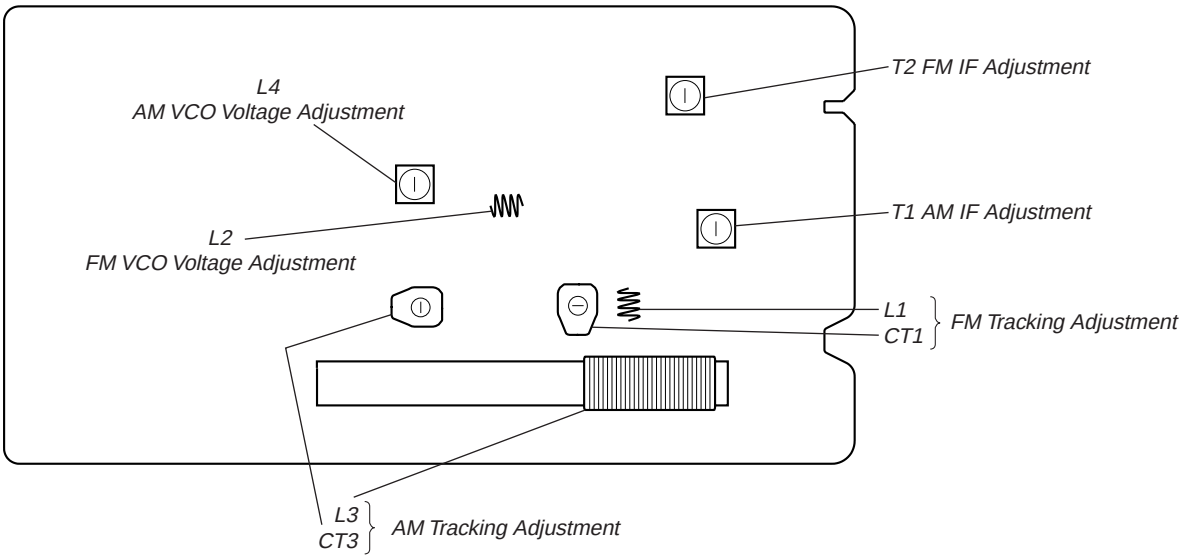
FM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
L2	108 MHz	3.0 ± 0.3 V
Confirmation	87.5 MHz	1.3 ± 0.4 V

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L1	87.5 MHz
CT1	108 MHz

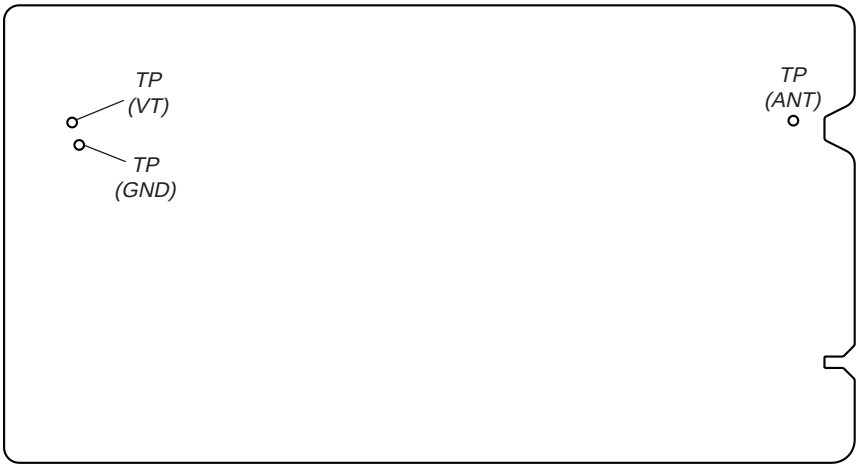
Adjustment and Connecting Location:
TUNER and AUDIO boards (See page 14)

Adjustment and Connecting Location:

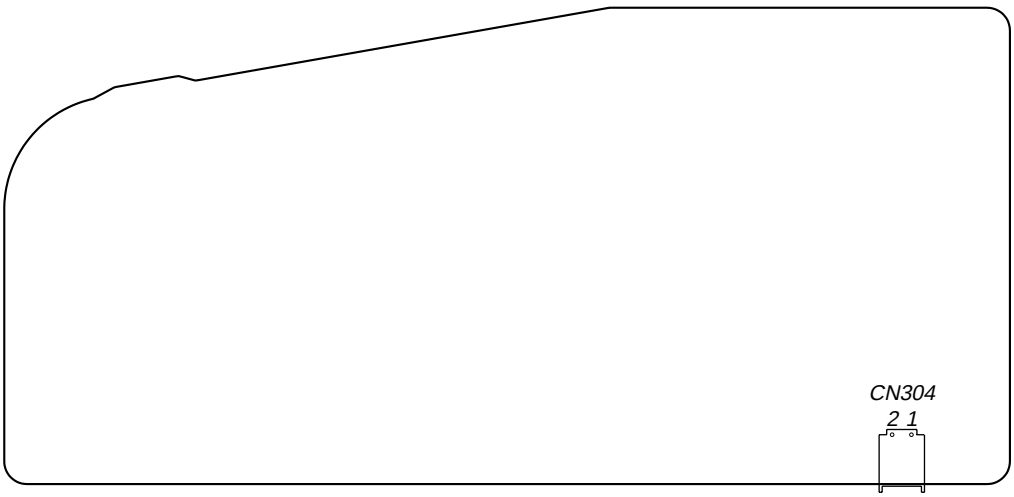
– TUNER Board (Component Side) –



– TUNER Board (Conductor Side) –



– AUDIO Board (Conductor Side) –

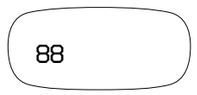


CD SECTION

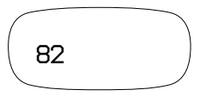
Perform all CD section check in the test mode.

HOW TO THE SET INTO CD TEST MODE

1. Press the [POWER] button to turn the power on.
2. Press the [■] button.
3. Set test mode by momentarily shorting both of TAP (TEST) on the CONTROL board to enter the CD test mode.
   LCD display:



4. Press the [►II] button, and press the [■] button to enter the STOP2 mode.
   LCD display:

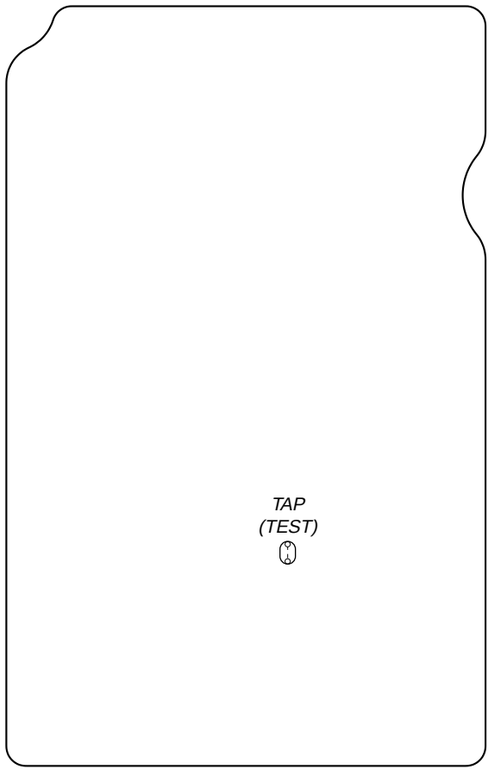


Note: When the following figure is displayed accidentally, release from the CD test mode and redo operation.
LCD display:

5. To release the CD test mode, press the [■] button, and turn the power off.

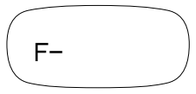
Checking Location:

– CONTROL Board (Conductor Side) –



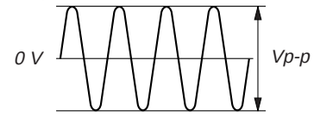
TRAVERSE CHECK

1. Connect an oscilloscope to TP (TE) and TP (VC) on the CD board.
2. Insert the disc (PATD-012). (Part No.: 4-225-203-01)
3. In the STOP2 mode, press the [►II] button to enter the FOCUS1 mode.
   LCD display:



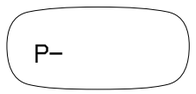
4. Confirm that the center of the oscilloscope waveform is at 0 V.
5. Confirm that the oscilloscope waveform Vp-p value is at 0.35 to 1.1 V.

VOLT/DIV: 0.2 V (with the 10:1 probe in use)
TIME/DIV : 1 ms



FOCUS BIAS CHECK

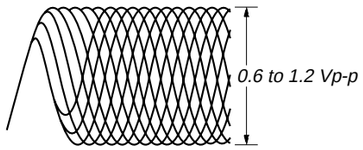
1. Connect the oscilloscope to TP (RF) and TP (VC) on the CD board.
2. Insert the disc (PATD-012). (Part No.: 4-225-203-01)
3. In the STOP2 mode, press the [►II] button two times to enter the ALL SERVO mode.
   LCD display:



4. Confirm that the oscilloscope waveform is as shown in the figure below. (eye pattern)
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.

• RF signal reference waveform (eye pattern)

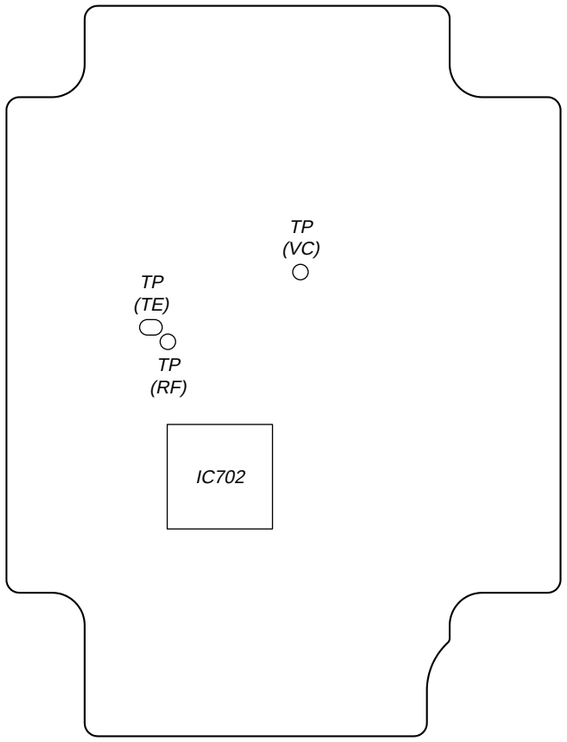
VOLT/DIV: 0.2 V (with the 10: 1 probe in use.)
TIME/DIV: 200 ns



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

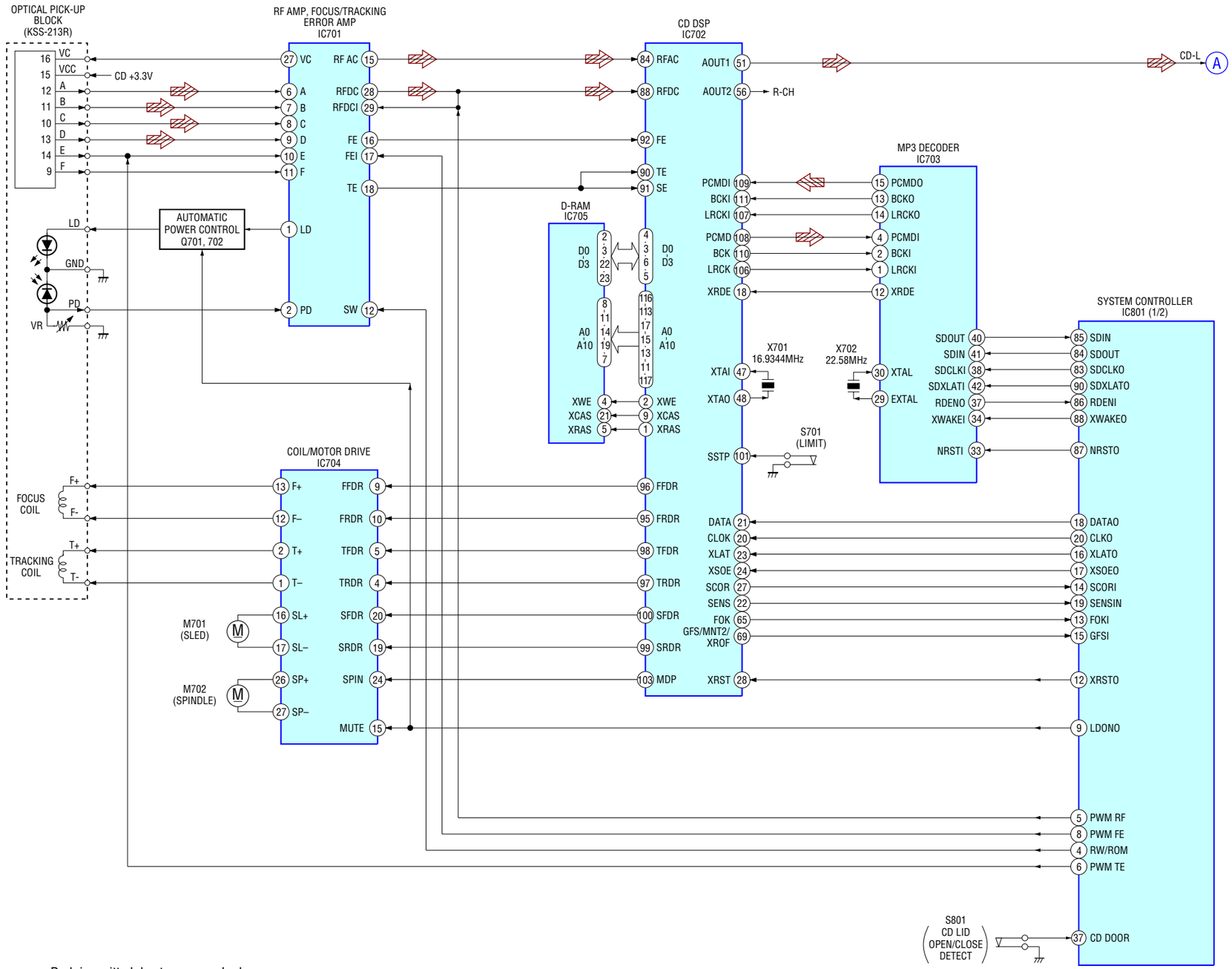
Checking Location:

– CD Board (Conductor Side) –



SECTION 5
DIAGRAMS

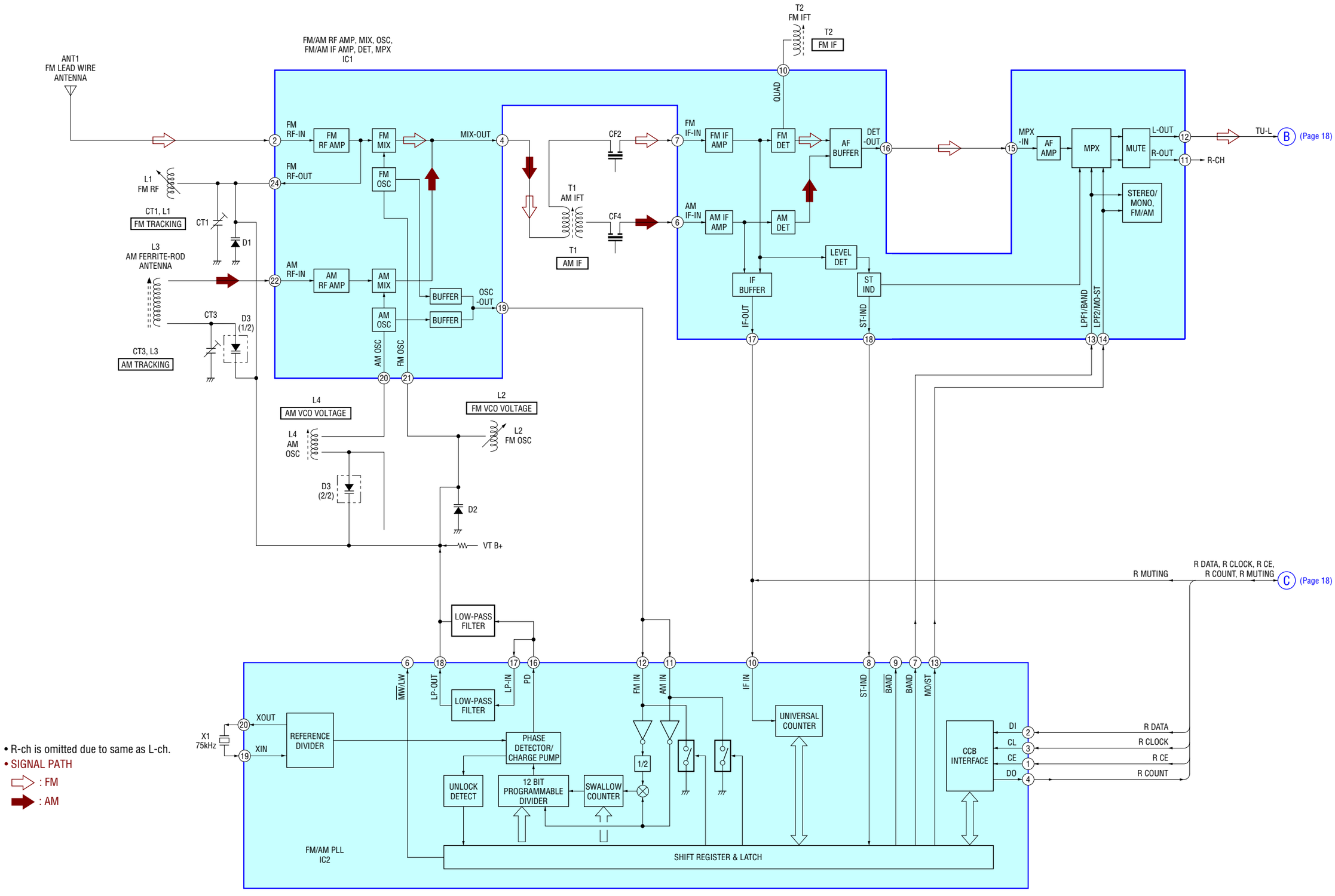
5-1. BLOCK DIAGRAM – CD SERVO Section –



- R-ch is omitted due to same as L-ch.
- SIGNAL PATH

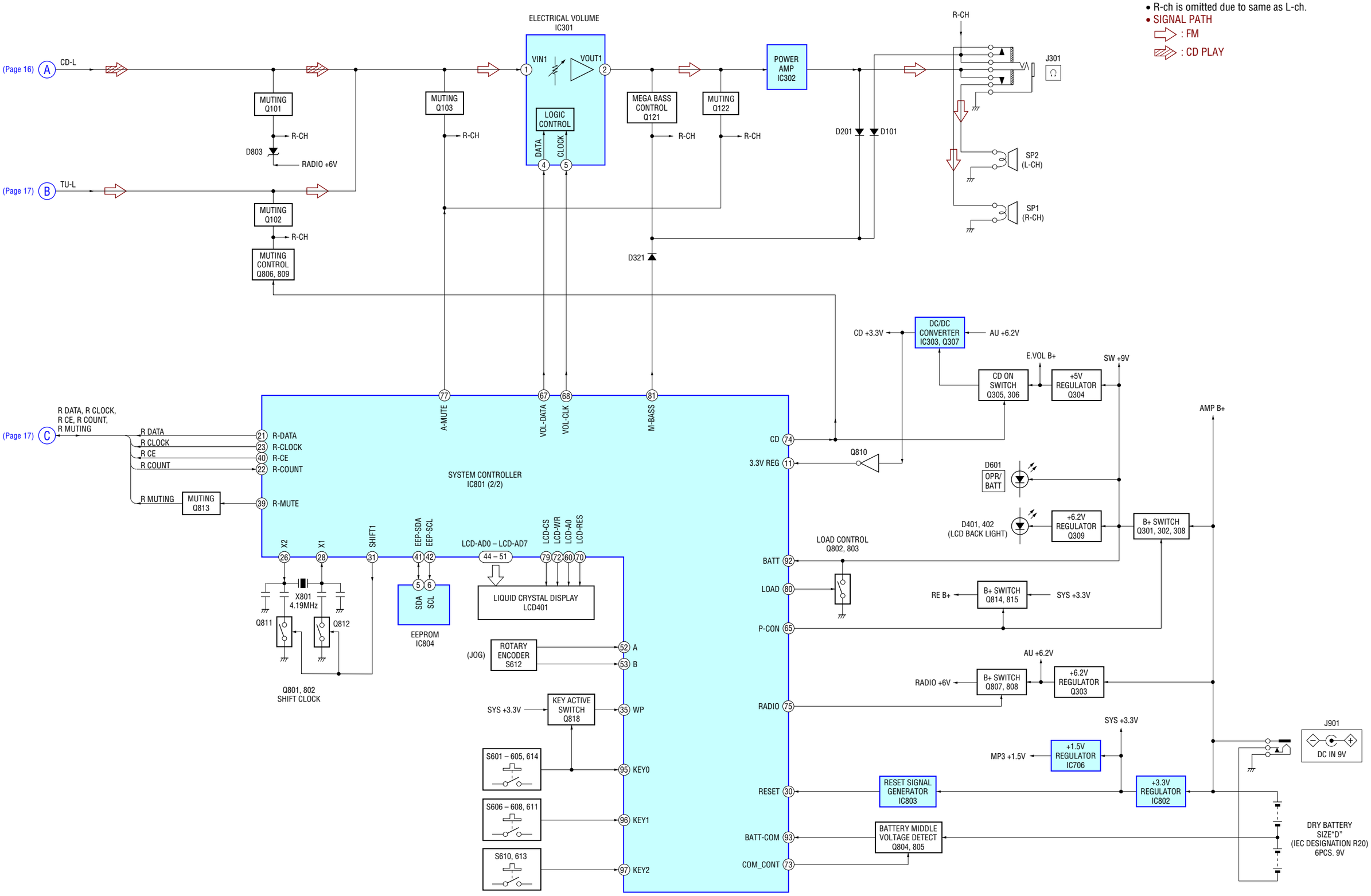
  : CD PLAY

5-2. BLOCK DIAGRAM – TUNER Section –



- R-ch is omitted due to same as L-ch.
- SIGNAL PATH
  - ⇨ : FM
  - ➡ : AM

5-3. BLOCK DIAGRAM – MAIN Section –



5-4. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Boards:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ⊡← : indicates side identified with part number.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

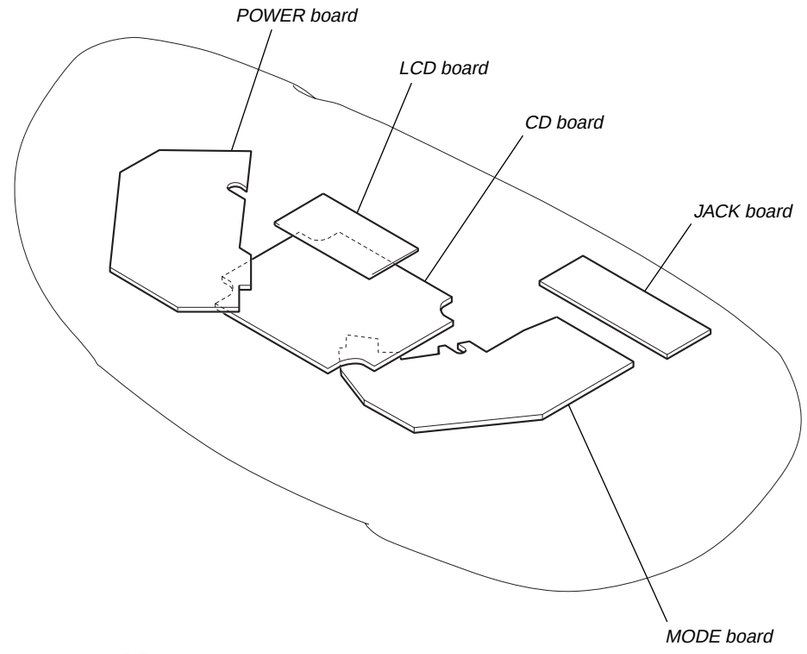
Note on Schematic Diagram:

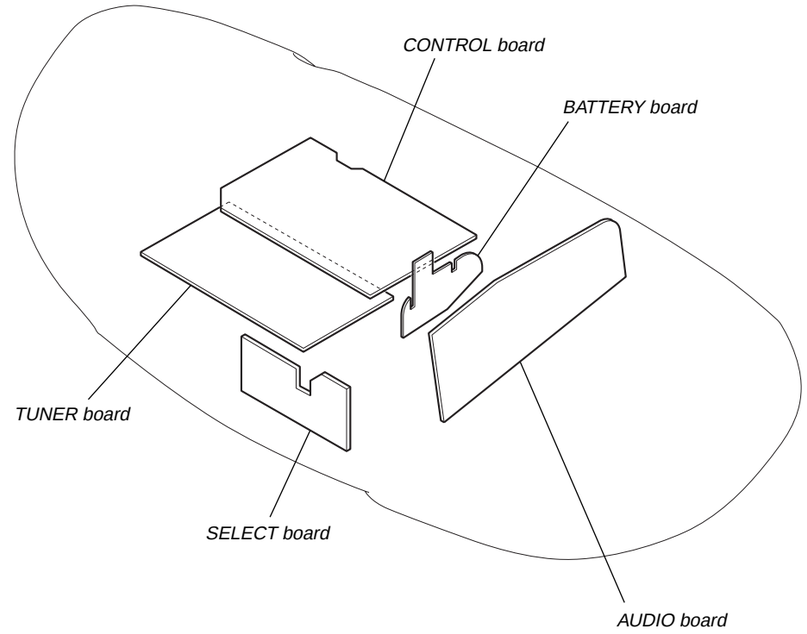
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬ : B+ Line.
- ▬ ▬ : B– Line.
- ▭ : adjustment for repair.
- Power voltage is dc 4.5V and fed with regulated dc power supply from pin ① and ③ of CN901 on the BATTERY board, and from pin ② and ③ as well.
  no mark : FM
  ⟨⟨ ⟩⟩ : AM
  ( ) : CD PLAY
  [ ] : MP3 PLAY
  ＊ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM
  ⇨ : CD PLAY
- Abbreviation
  SP : Singapore model

- **Circuit Boards Location**





5-5. PRINTED WIRING BOARD – CD Board –

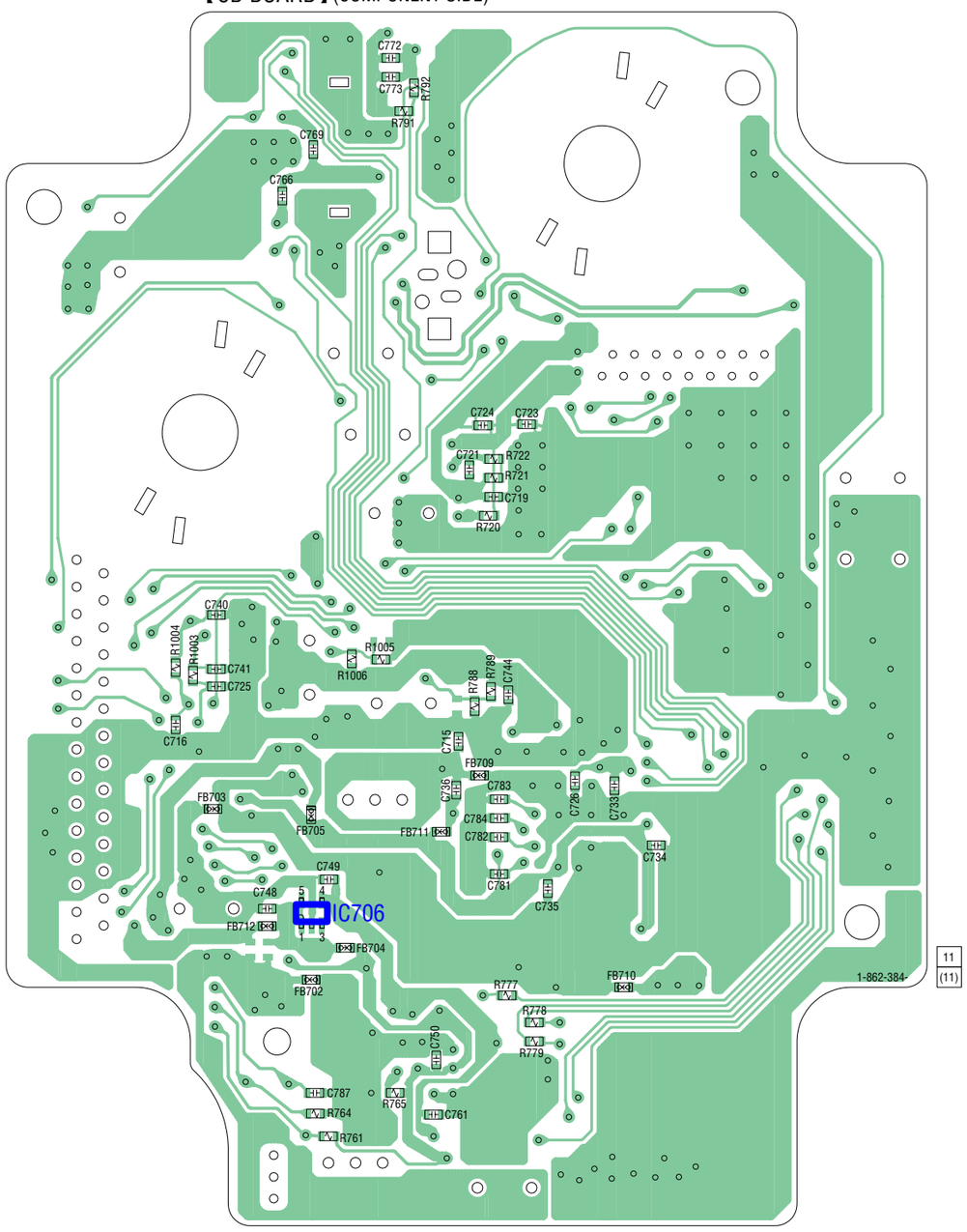
• See page 19 for Circuit Boards Location.

:Uses unleaded solder.

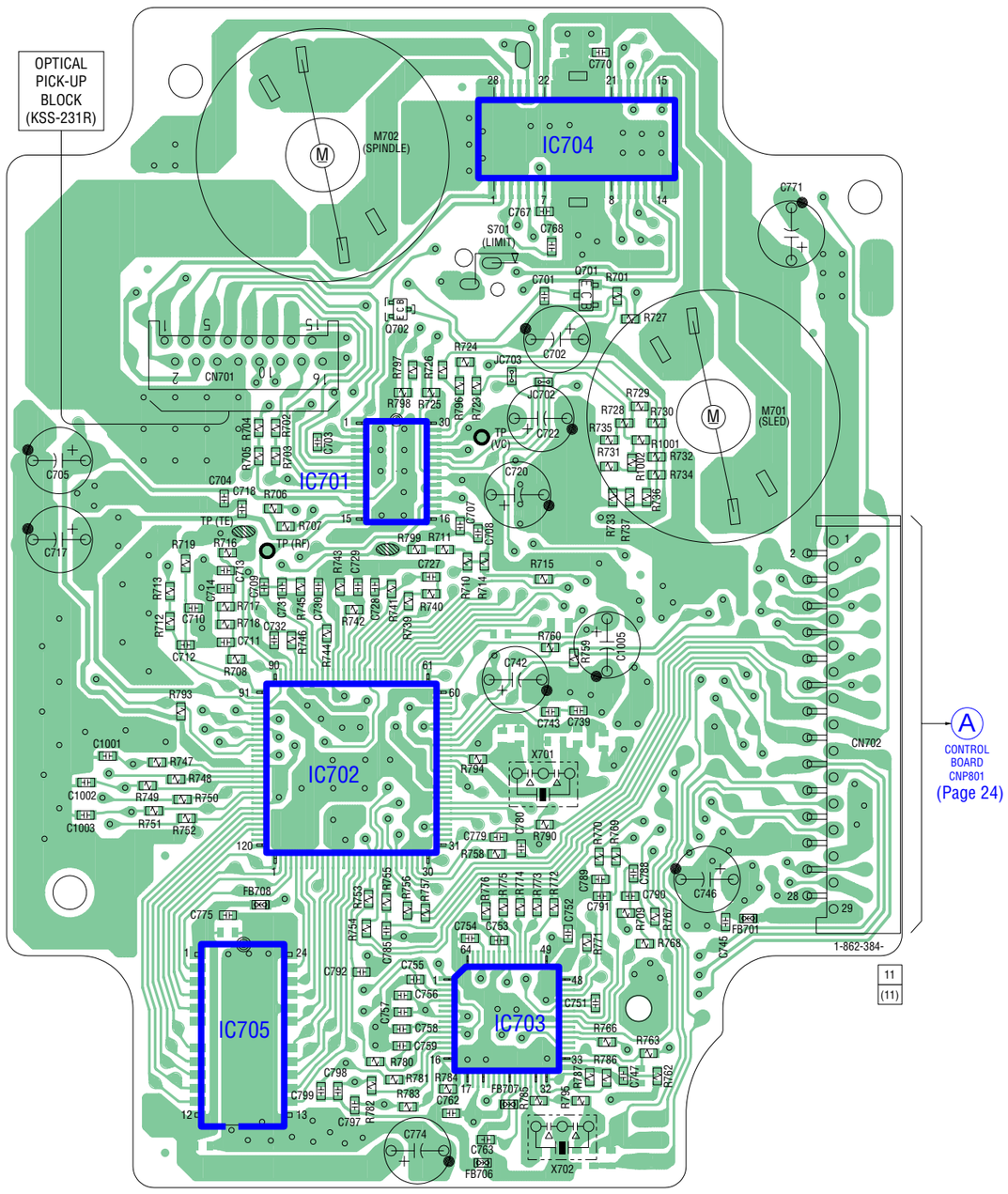
- **Semiconductor Location**

Ref. No.	Location
IC701	E-11
IC702	G-11
IC703	I-12
IC704	B-13
IC705	I-10
IC706	H-3
Q701	C-13
Q702	C-11

【CD BOARD】(COMPONENT SIDE)



【CD BOARD】(CONDUCTOR SIDE)



A
CONTROL BOARD CNP801
(Page 24)

5-6. SCHEMATIC DIAGRAM – CD Board – • See page 30 for Waveforms. • See page 30 for IC Block Diagrams. • See page 35 for IC Pin Function Description.

【CD BOARD】

IC702 CD DSP IC702 CXD3029R

IC701 RF AMP,FOCUS/TRACKING ERROR AMP IC701 CXA2647N

IC703 MP3 DECODER IC703 CXR710160-209R

IC704 COIL/MOTOR DRIVE IC704 BA5946FP-E2

IC705 D-RAM IC705 MSM51V17400F -10TK-FS

IC706 +1.5V REGULATOR IC706 S-T1118I5MC

OPTICAL PICK-UP BLOCK (KSS-213R)

IC B/D

A CONTROL BOARD CNP801 (Page 25)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

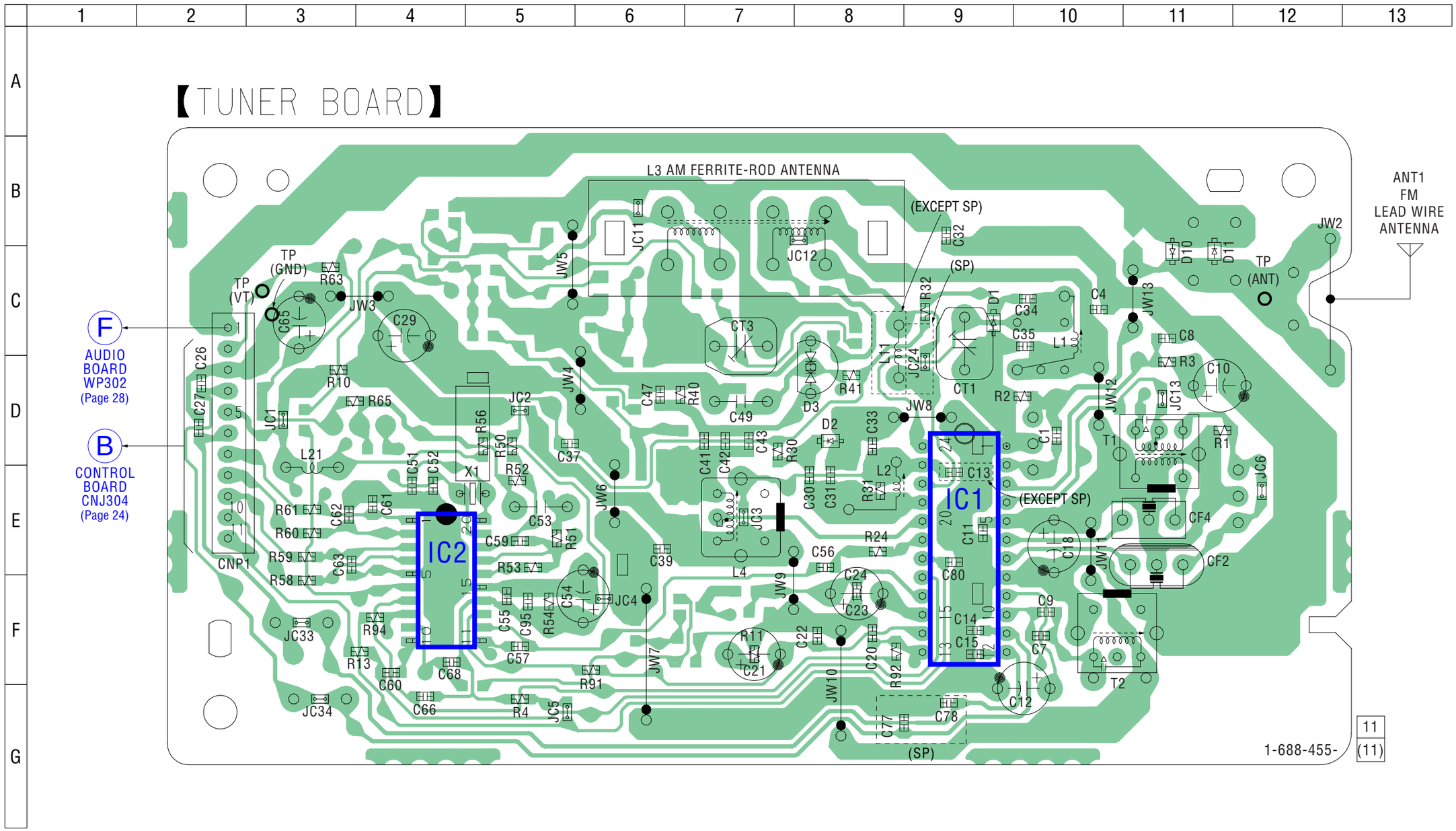
5-7. PRINTED WIRING BOARD – TUNER Board –

• See page 19 for Circuit Boards Location.

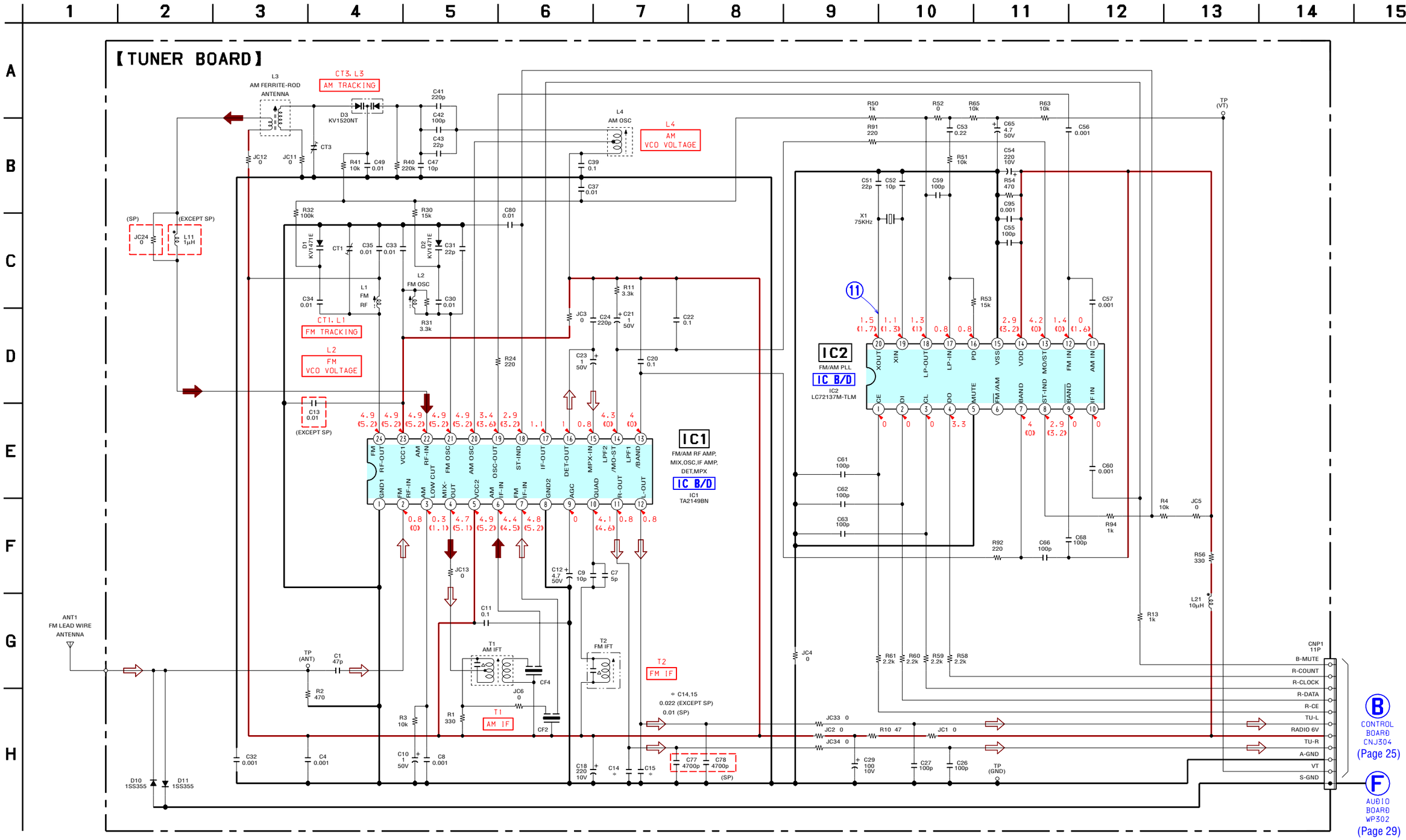
:Uses unleaded solder.

• **Semiconductor Location**

Ref. No.	Location
D1	C-0
D2	D-8
D3	D-8
D10	C-11
D11	C-11
IC1	E-9
IC2	F-4



5-8. SCHEMATIC DIAGRAM – TUNER Board – • See page 30 for Waveform. • See page 30 for IC Block Diagrams.



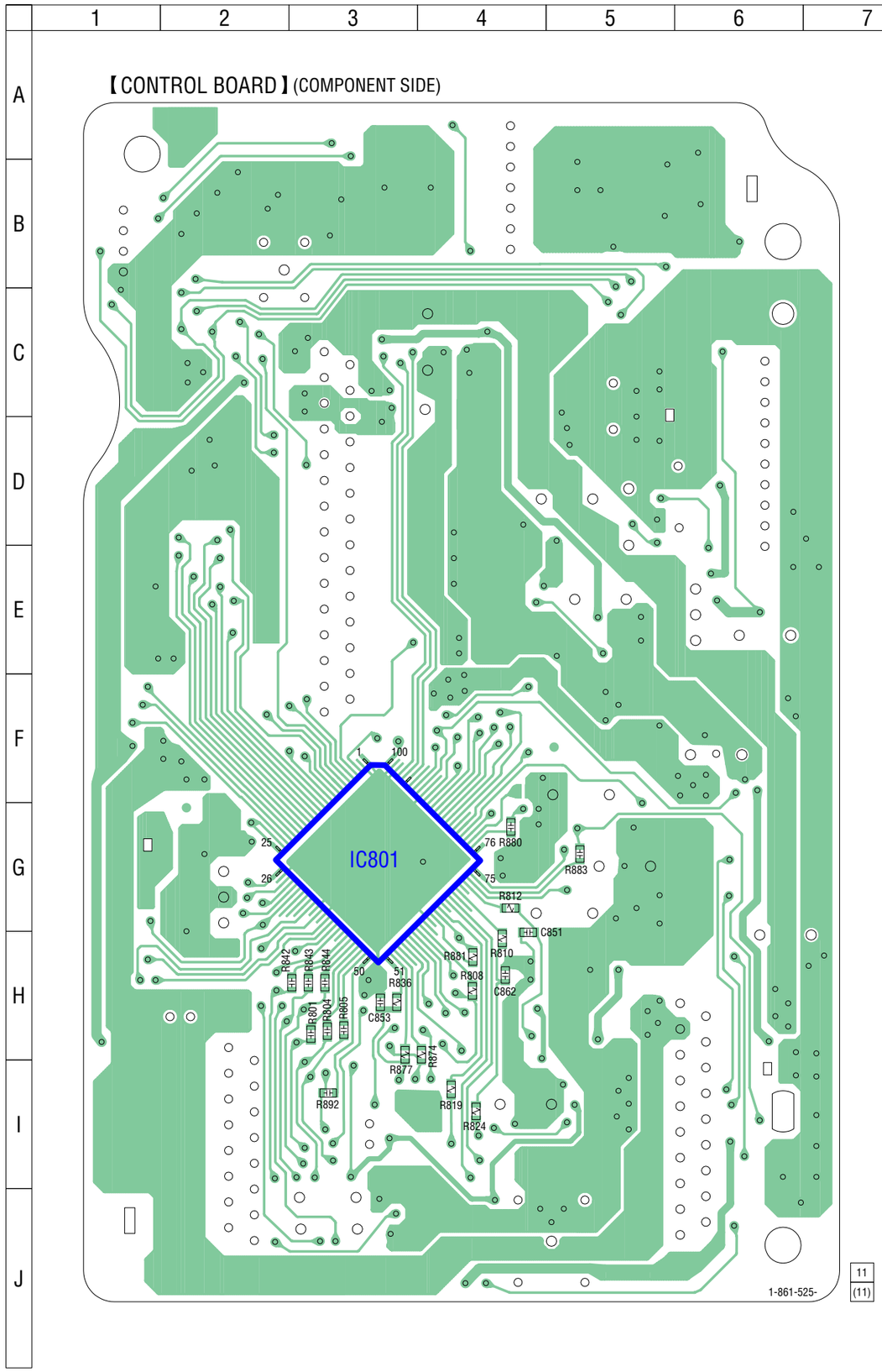
5-9. PRINTED WIRING BOARD – CONTROL Board –

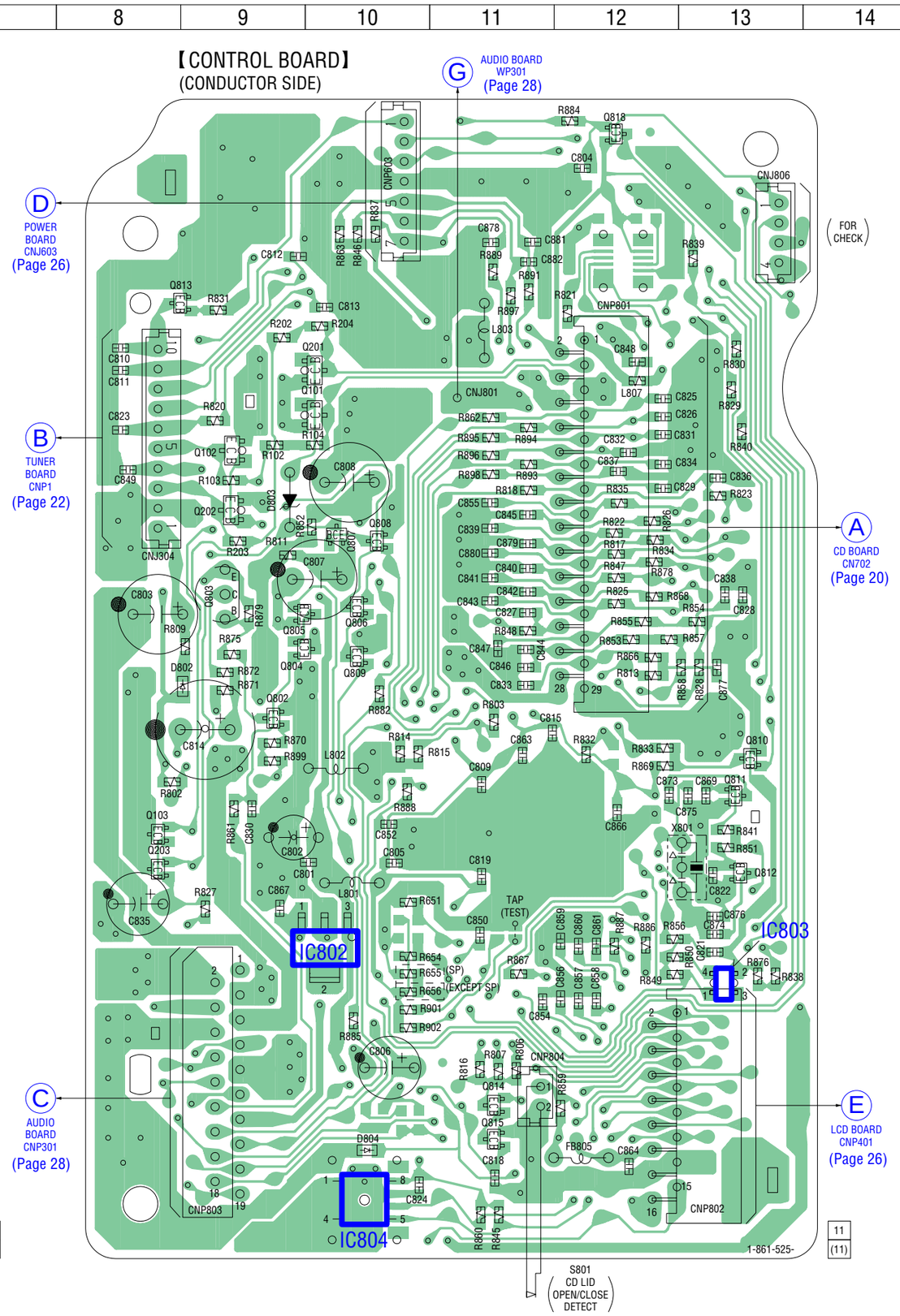
• See page 19 for Circuit Boards Location.

:Uses unleaded solder.

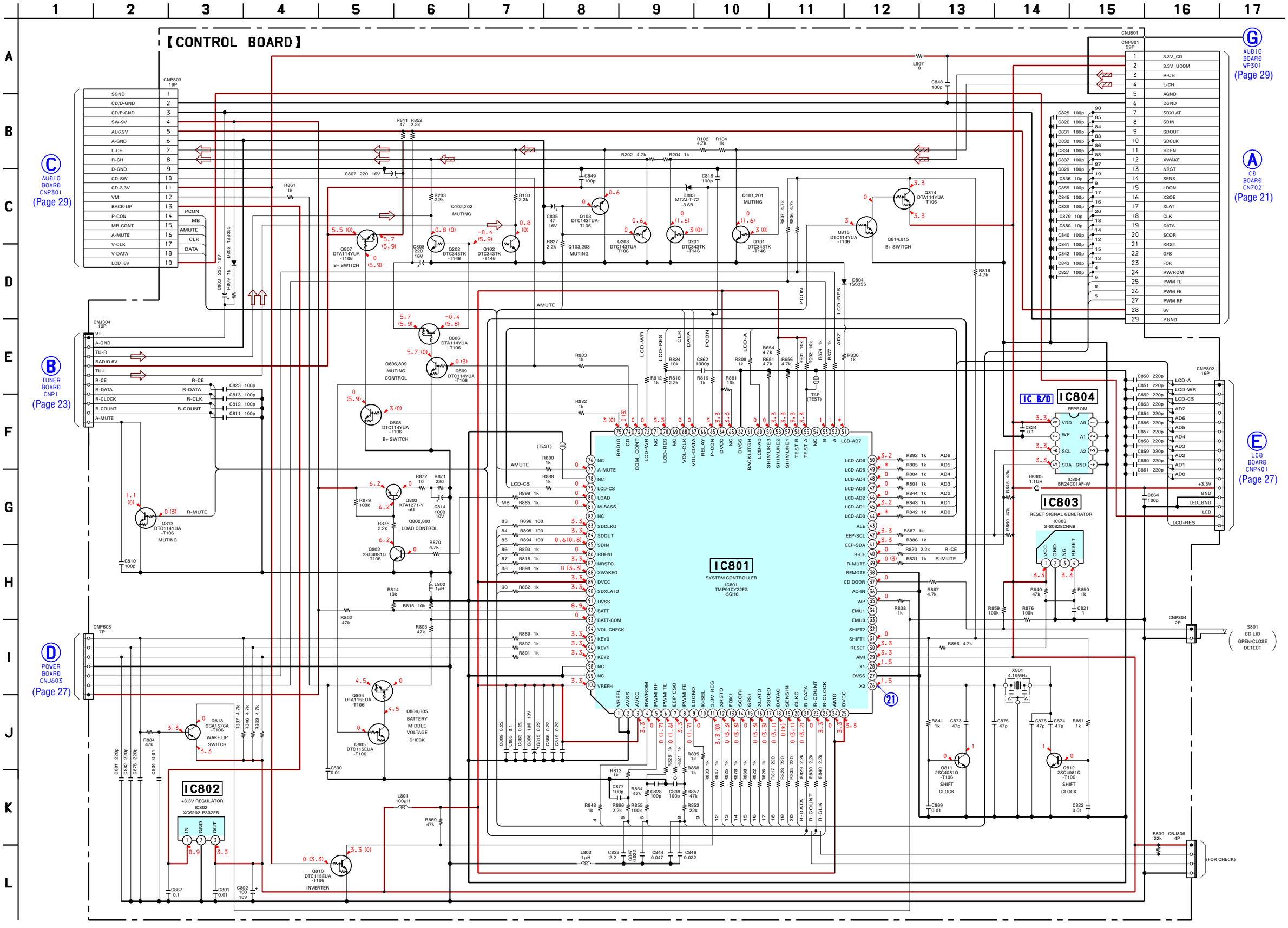
• **Semiconductor Location**

Ref. No.	Location
D802	F-9
D803	D-9
D804	J-10
IC801	G-3
IC802	H-10
IC803	H-13
IC804	J-10
Q101	D-10
Q102	D-9
Q103	G-8
Q201	C-10
Q202	D-9
Q203	G-8
Q802	F-9
Q803	E-9
Q804	E-9
Q805	E-9
Q806	E-10
Q807	E-10
Q808	E-10
Q809	F-10
Q810	F-13
Q811	G-13
Q812	G-13
Q813	C-8
Q814	I-11
Q815	I-11
Q818	A-12



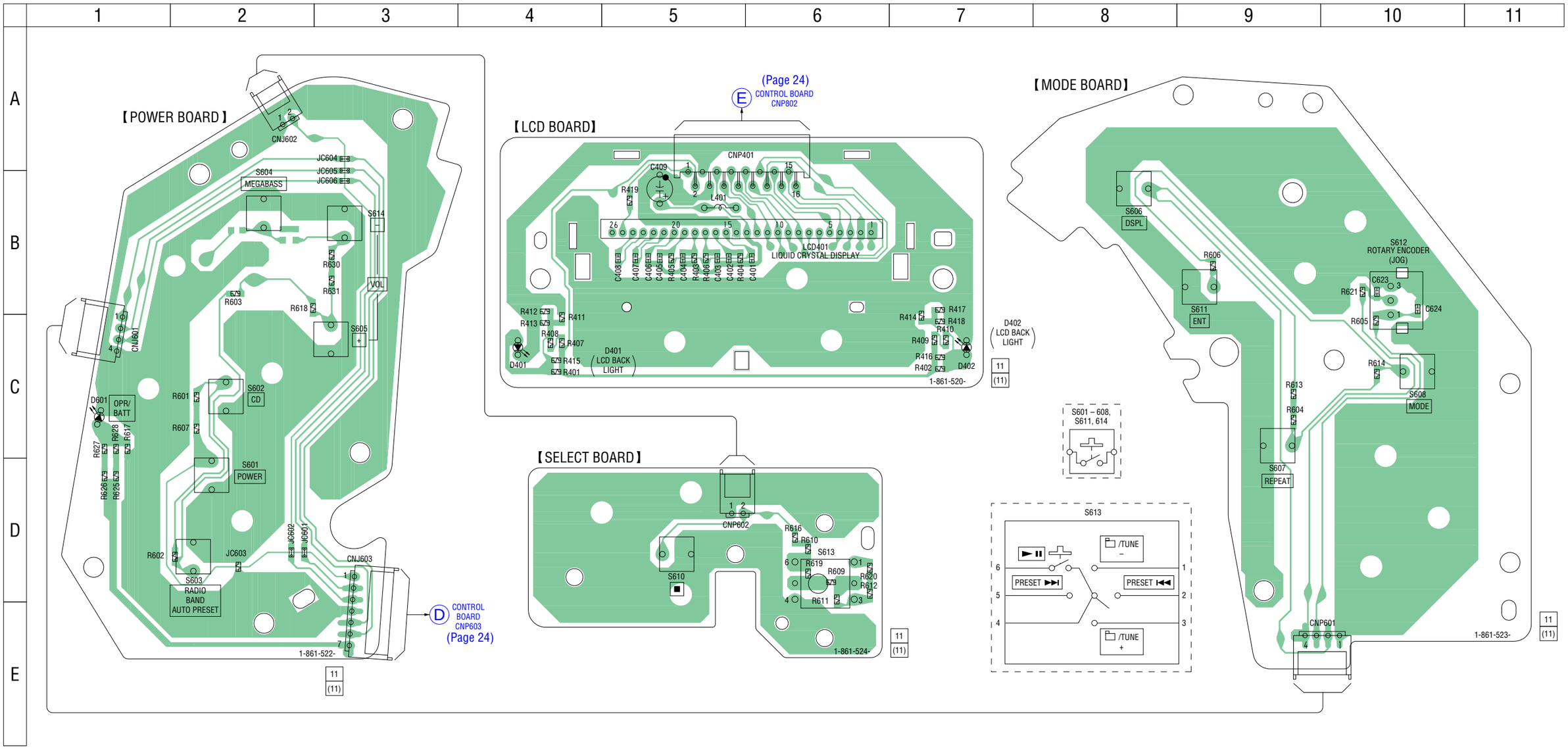


5-10. SCHEMATIC DIAGRAM – CONTROL Board – • See page 30 for Waveform. • See page 30 for IC Block Diagram. • See page 35 for IC Pin Function Description.

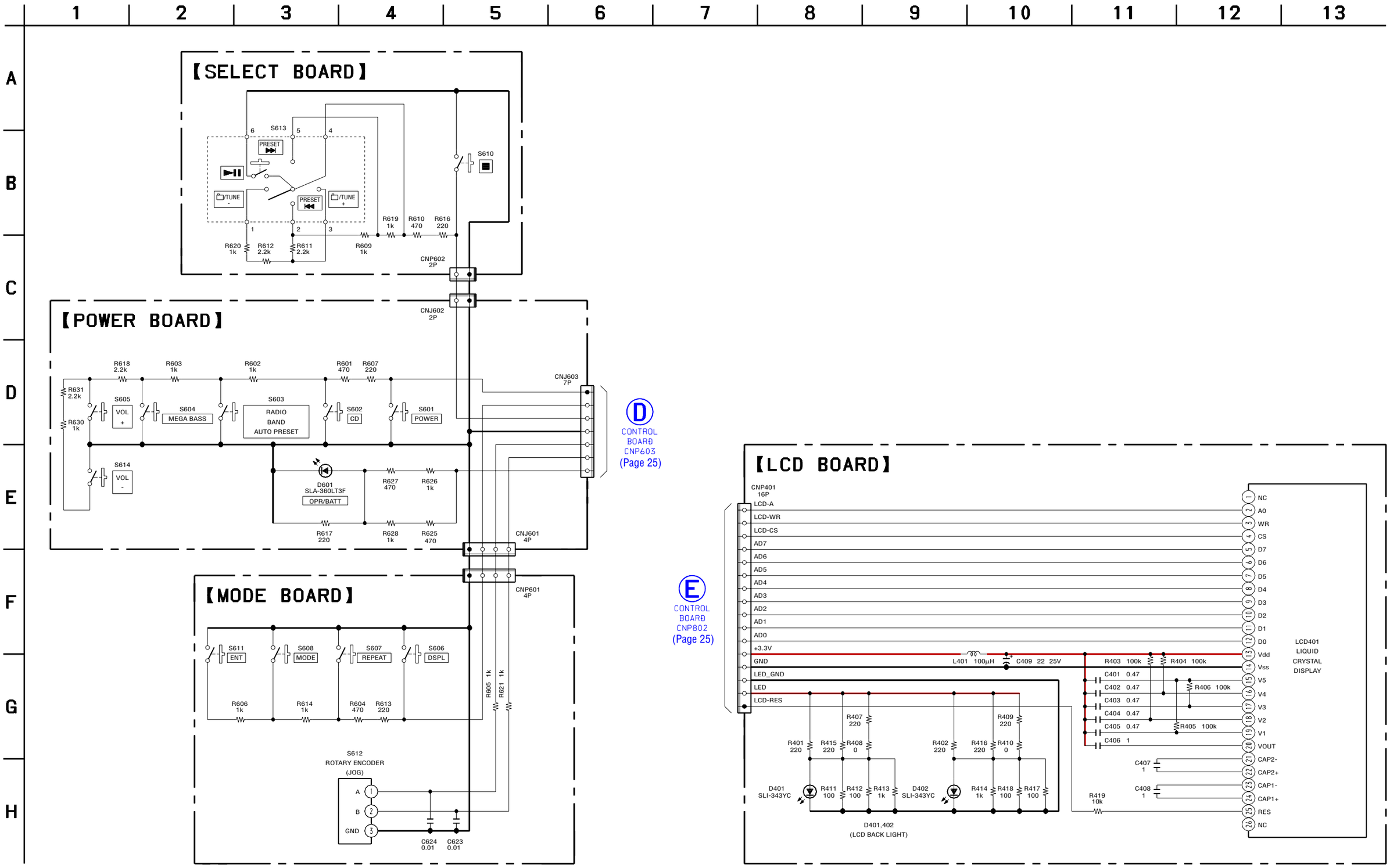


5-11. PRINTED WIRING BOARDS – PANEL Section –

• See page 19 for Circuit Boards Location. :Uses unleaded solder.



5-12. SCHEMATIC DIAGRAM – PANEL Section –



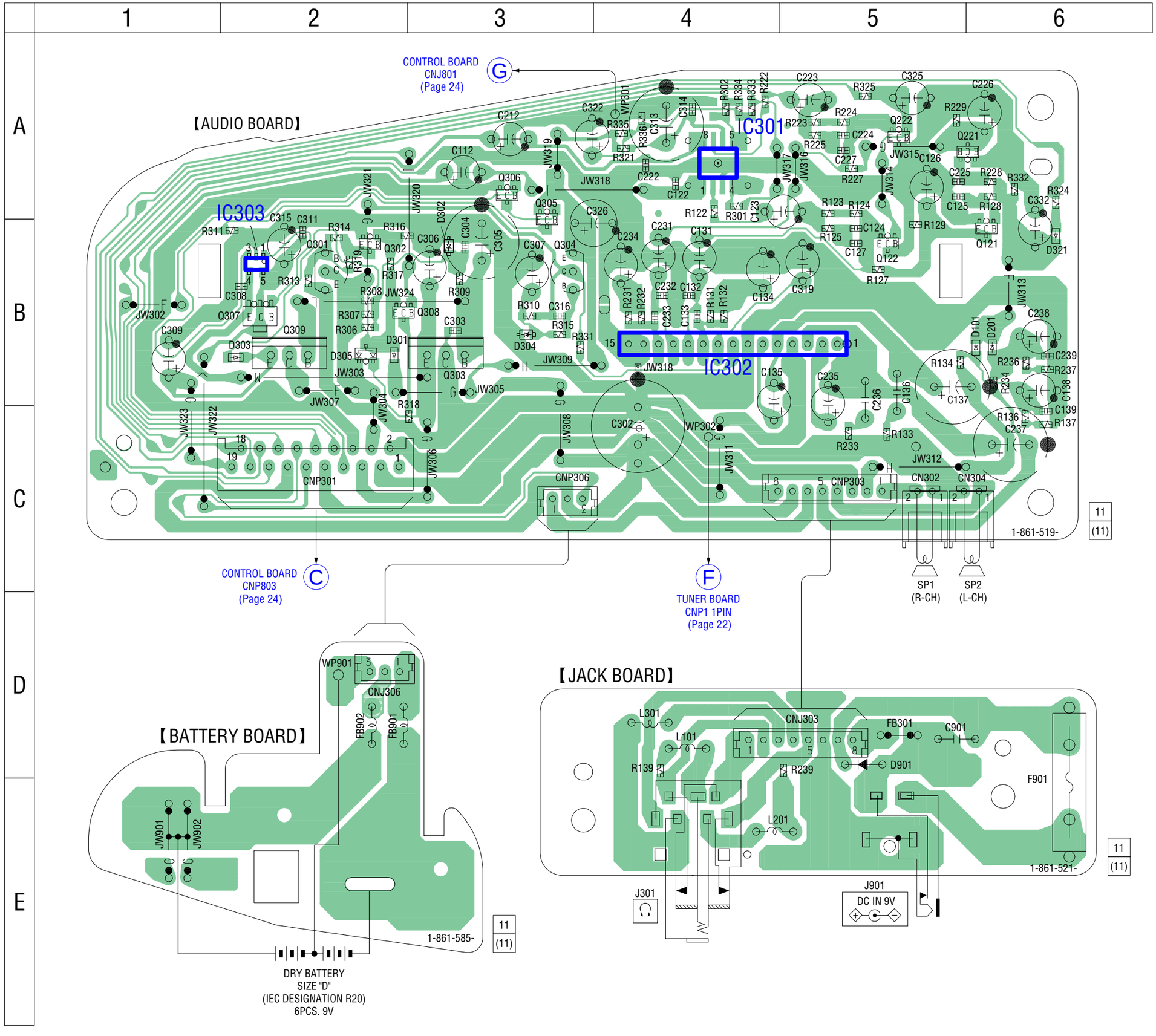
5-13. PRINTED WIRING BOARDS – AUDIO Section –

• See page 19 for Circuit Boards Location.

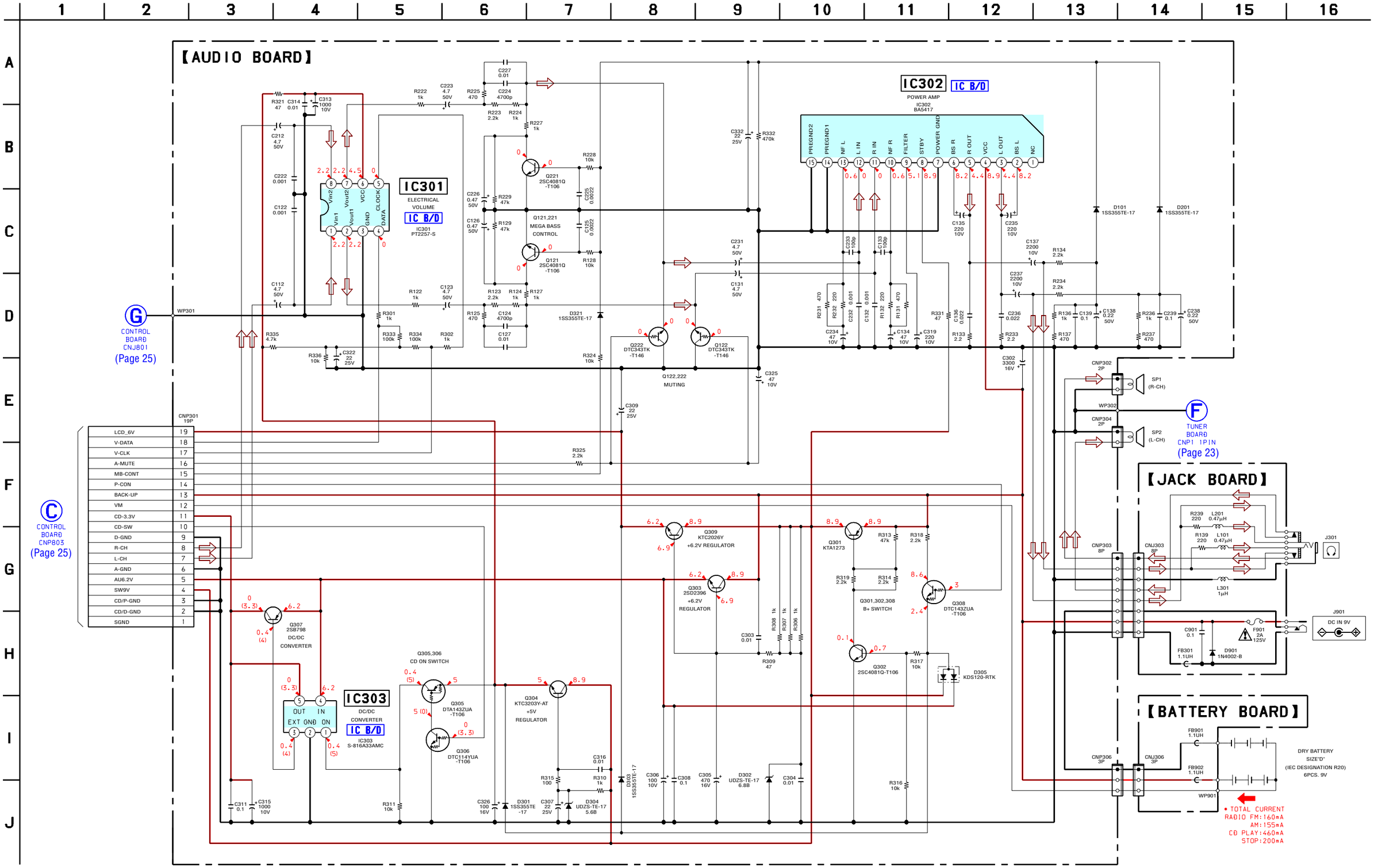
:Uses unleaded solder.

• **Semiconductor Location**

Ref. No.	Location
D101	B-6
D201	B-6
D301	B-2
D302	B-3
D303	B-2
D304	B-3
D305	B-2
D321	B-6
IC301	A-4
IC302	B-4
IC303	B-2
Q121	B-6
Q122	B-5
Q221	A-6
Q222	A-5
Q301	B-2
Q302	B-2
Q303	B-3
Q304	B-3
Q305	B-3
Q306	A-3
Q307	B-2
Q308	B-2
Q309	B-2



5-14. SCHEMATIC DIAGRAM – AUDIO Section – • See page 30 for IC Block Diagrams.

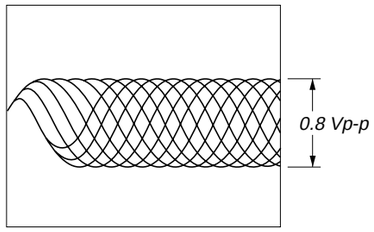


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

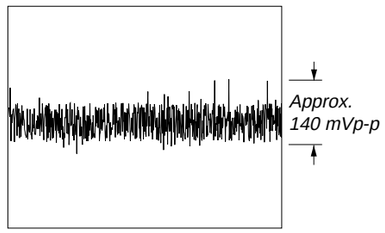
• Waveforms

– CD Board –

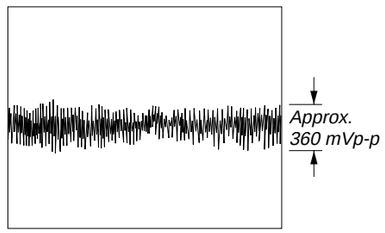
① IC701 ⑮ (RFAC) (CD play mode)



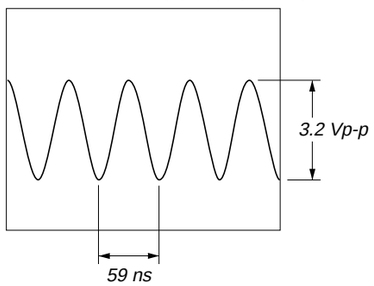
② IC701 ⑯ (FE) (CD play mode)



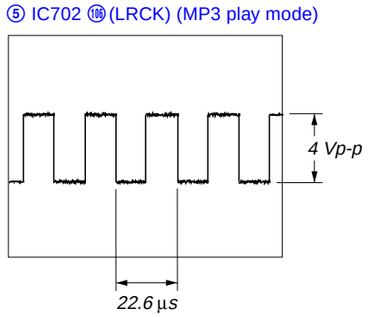
③ IC701 ⑱ (TE) (CD play mode)



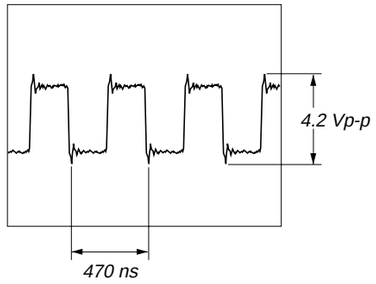
④ IC702 ㊽ (XTAO) (CD play mode)



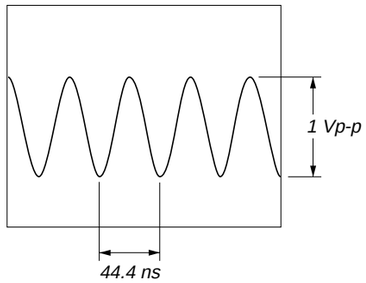
⑤ IC702 ⑯ (LRCK) (MP3 play mode)



⑥ IC702 ⑩ (BCK) (MP3 play mode)

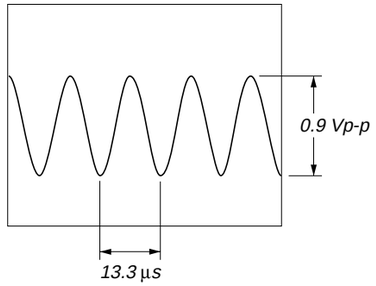


⑦ IC703 ㉙ (EXTAL) (MP3 play mode)



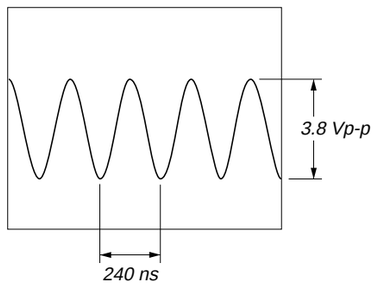
– TUNER Board –

⑪ IC2 ⑳ (XOUT)



– CONTROL Board –

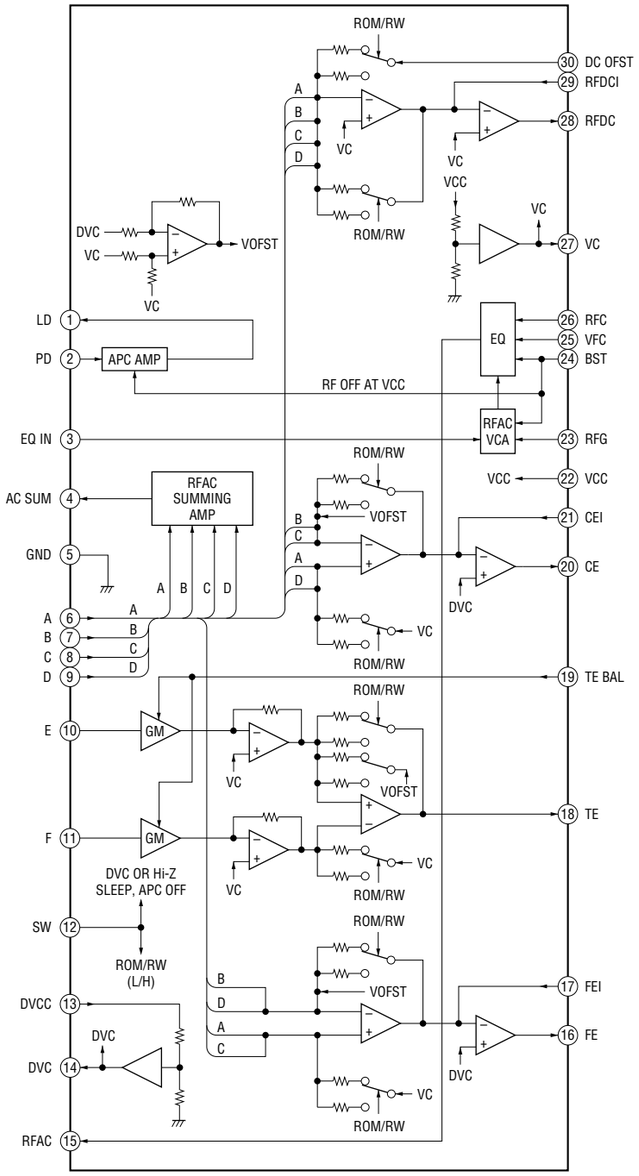
㉑ IC801 ㉖ (X2)



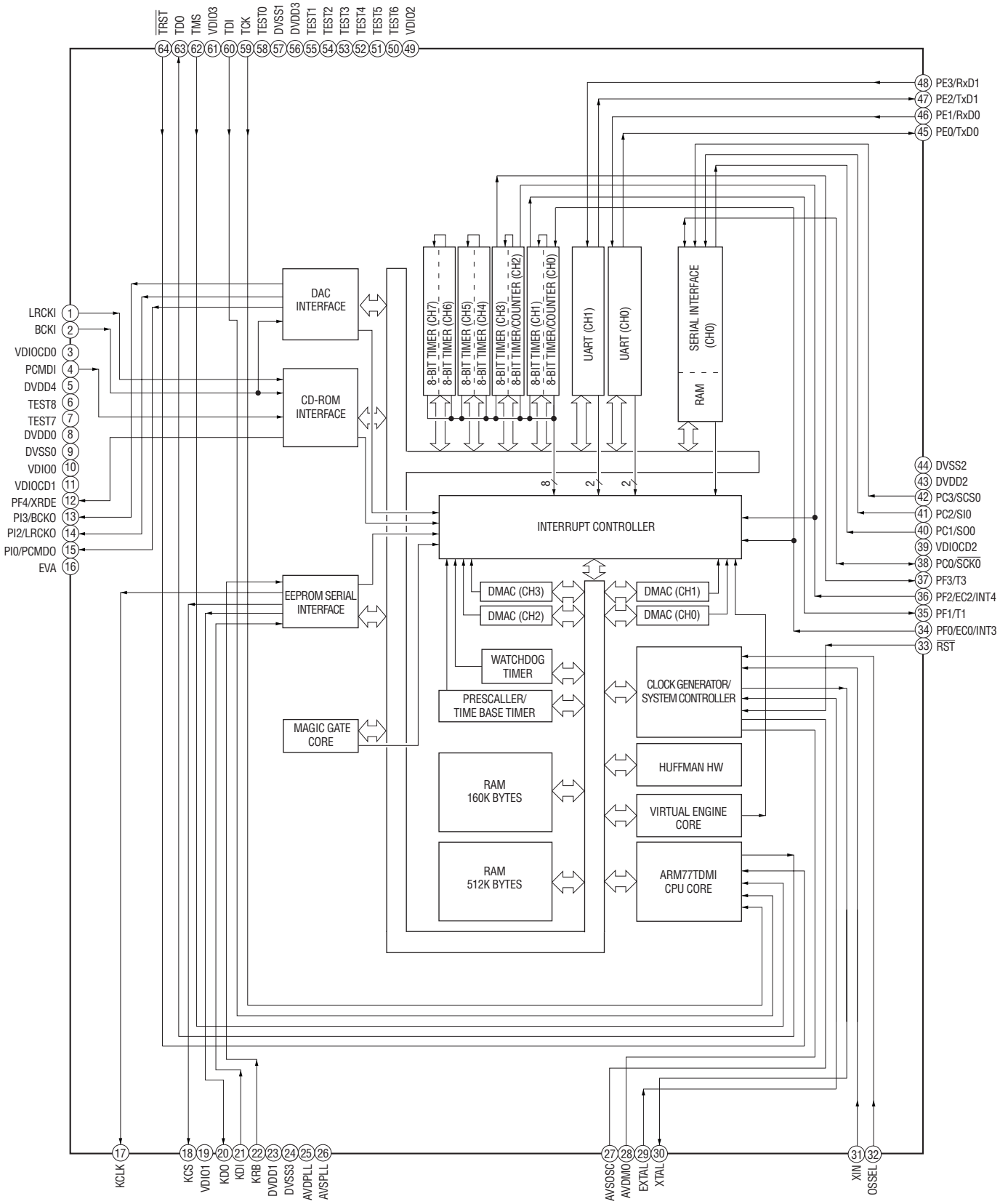
• IC Block Diagrams

– CD Board –

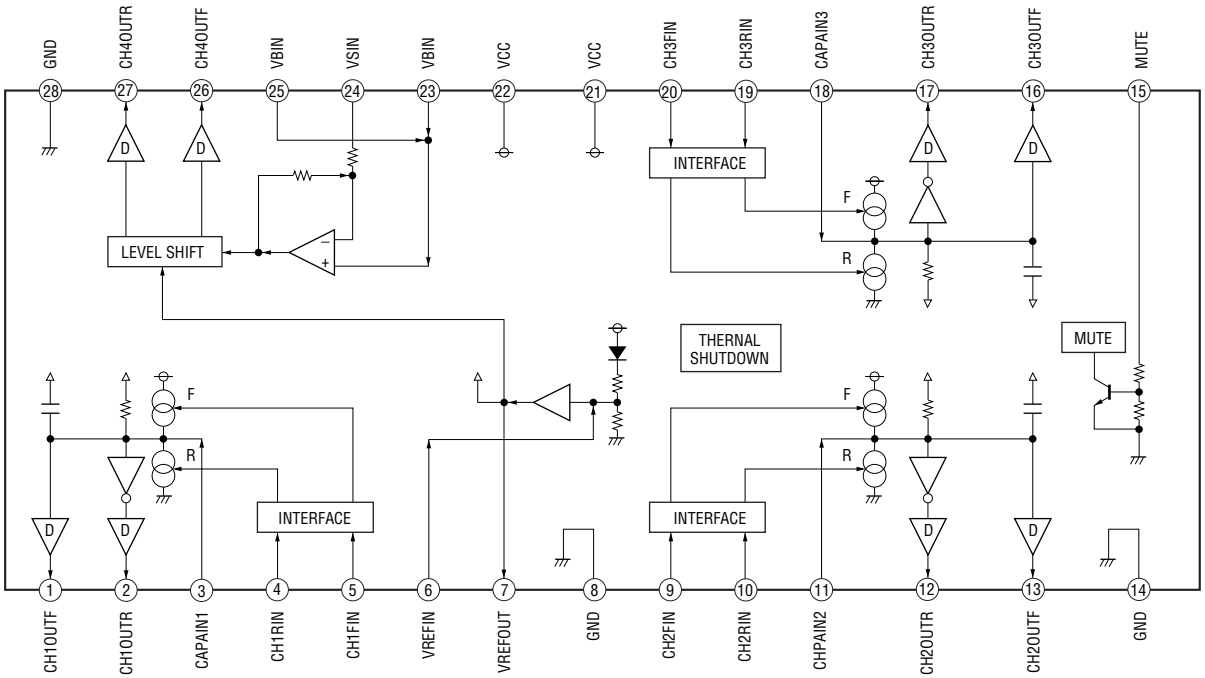
IC701 CXA2647N-T4



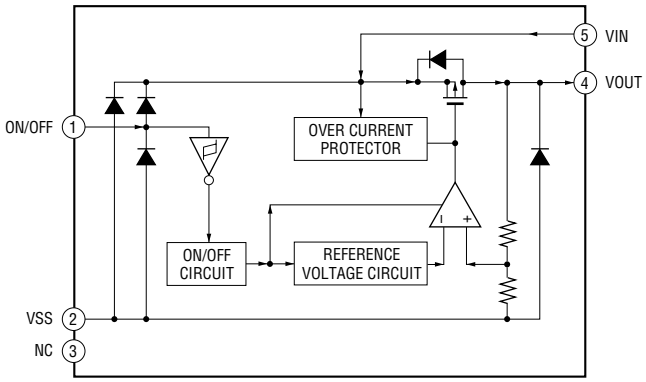
IC703 CXR710160-209R



IC704 BA5946FP-E2

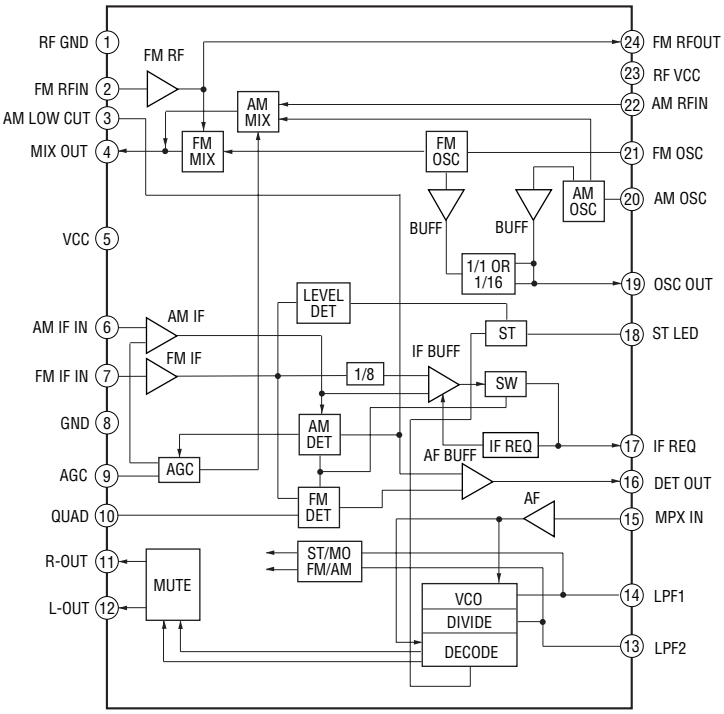


IC706 S-T111B15MC-OGATFG

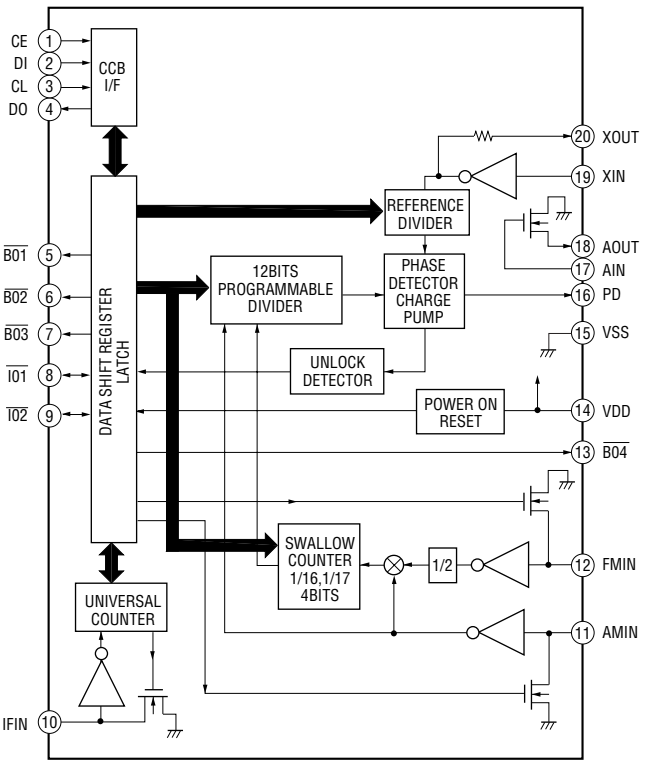


– TUNER Board –

IC1 TA2149BN

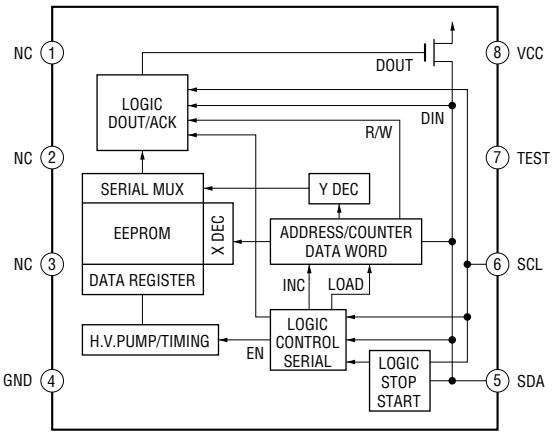


IC2 LC72137M-TLM-E



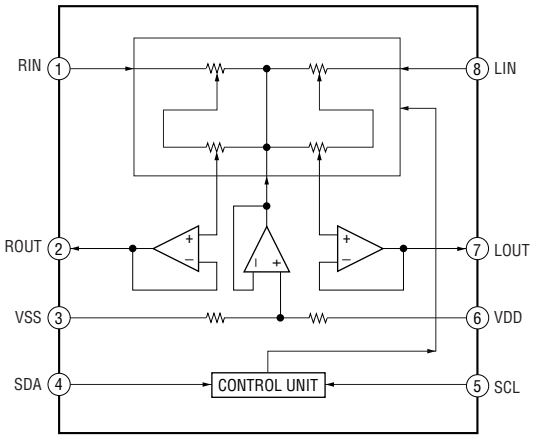
– CONTROL Board –

IC804 BR24C01AF-W

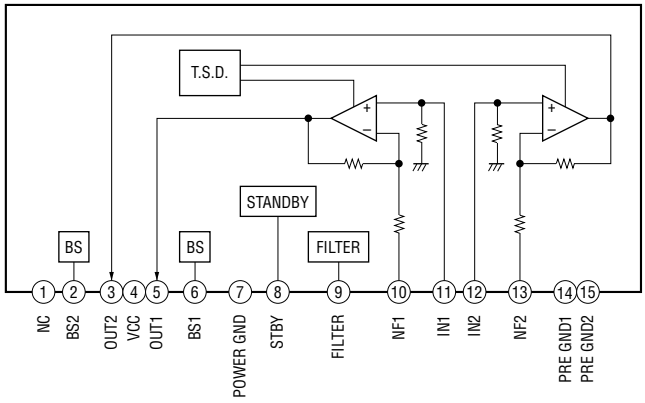


– AUDIO Board –

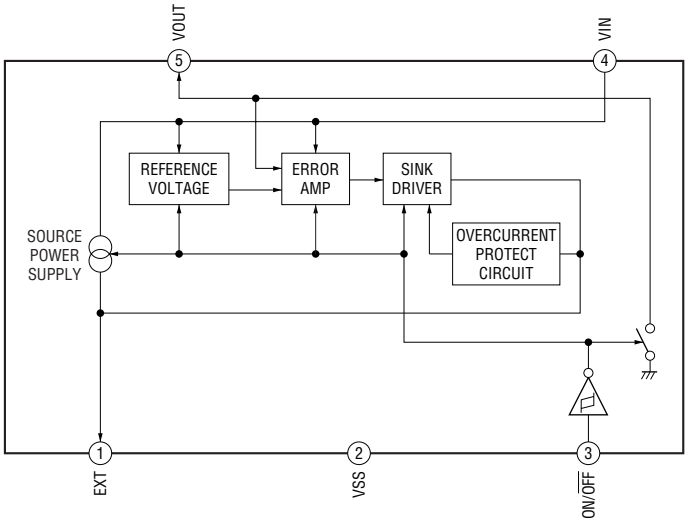
IC301 PT2257-S



IC302 BA5417



IC303 S-816A33AMC-BAI-T2



- **IC Pin Function Description**

CD BOARD IC702 CXD3029R (CD DSP)

Pin No.	Pin Name	I/O	Description
1	XRAS	O	Row address strobe signal output to the D-RAM
2	XWE	O	Data input enable signal output to the D-RAM
3 to 6	D1, D0, D3, D2	I/O	Two-way data bus with the D-RAM
7, 8	TEST1, TEST2	O	Not used
9	XCAS	O	Column address strobe signal output to the D-RAM
10	WFCK	O	Not used
11 to 13	A9 to A7	O	Address signal output to the D-RAM
14	DVSS	—	Ground terminal
15 to 17	A6 to A4	O	Address signal output to the D-RAM
18	XRDE	I	Read enable signal input from the MP3 decoder
19	VDD0	—	Power supply terminal (+3.3V)
20	CLOK	I	Serial data transfer clock signal input from the system controller
21	DATA	I	Serial data input from the system controller
22	SENS	O	SENS signal output to the system controller
23	XLAT	I	Serial data latch pulse signal input from the system controller
24	XSOE	I	Serial data output enable signal input from the system controller
25	SYSM	I	Analog muting on/off control signal input from the system controller “H”: muting on fixed at “L” in this set
26	WDCK	O	Not used
27	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller
28	XRST	I	Reset signal input from the system controller “L”: reset
29	PWMI	I	Not used
30	XQOK	I	Not used
31	XWRE	I	Not used
32	R8M	O	System clock output terminal Not used
33	VSS0	—	Ground terminal
34	SQCK	I	SQSO readout clock signal input terminal Not used
35	SCLK	I	SENS serial data read clock signal input terminal Not used
36	SQSO	O	Not used
37	XEMP	O	Not used
38	XWIH	O	Not used
39	SBSO	O	Not used
40	EXCK	O	SQSO readout clock signal output terminal Not used
41	XTSL	I	Input terminal for the system clock frequency setting fixed at “L” in this set
42	HVSS	—	Ground terminal
43	HPL	O	Not used
44	HPR	O	Not used
45	HPVDD	—	Power supply terminal (+3.3V)
46	XVDD	—	Power supply terminal (+3.3V)
47	XTAI	I	System clock input terminal (16.9344 MHz)
48	XTAO	O	System clock output terminal (16.9344 MHz)
49	XVSS	—	Ground terminal
50	AVDD1	—	Power supply terminal (+3.3V)
51	AOUT1	O	L-ch analog audio signal output terminal
52	VREFL	O	L-ch reference voltage output terminal

Pin No.	Pin Name	I/O	Description
53, 54	AVSS1, AVSS2	—	Ground terminal
55	VREFR	O	R-ch reference voltage output terminal
56	AOUT2	O	R-ch analog audio signal output terminal
57	AVDD2	—	Power supply terminal (+3.3V)
58	TES1	I	Input terminal for the test (fixed at “L”)
59	TEST	I	Input terminal for the test (fixed at “L”)
60	VSS1	—	Ground terminal
61	LRMU	O	Muting on/off control signal output terminal Not used
62	DOUT	O	Not used
63	ATSK	I/O	Not used
64	DFCT	I/O	Not used
65	FOK	O	Focus OK signal output to the system controller
66	MIRR	I/O	Not used
67	COUT	I/O	Not used
68	C2PO/MNT3/ GTOP	O	Not used
69	GFS/MNT2/ XROF	O	GFS signal output to the system controller
70	XUGF/MNT0/ RFCK	O	Not used
71	XPCK/MNT1/ XPCK	O	Not used
72	VDD1	—	Power supply terminal (+3.3V)
73	PCO	O	Charge pump output terminal for master PLL
74	FILI	I	Filter input terminal for master PLL
75	FILO	O	Filter output terminal for master PLL
76	CLTV	I	VCO1 control voltage input terminal for multiplier
77	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
78	VPCO	O	Charge pump output terminal for broad-band EFM PLL
79	AVSS3	—	Ground terminal
80	ASYO	O	EFM full-swing output terminal
81	ASYI	I	Asymmetry comparator voltage input terminal
82	BIAS	I	Asymmetry circuit constant current input terminal
83	AVDD3	—	Power supply terminal (+3.3V)
84	RFAC	I	EFM signal input from the RF amplifier
85	AVDD0	—	Power supply terminal (+3.3V)
86	IGEN	I	Stabilized current input terminal
87	AVSS0	—	Ground terminal
88	RFDC	I	RF signal input from the RF amplifier
89	CE	I	Chip enable signal input terminal Not used
90	TE	I	Tracking error signal input from the RF amplifier
91	SE	I	Sled error signal input from the RF amplifier
92	FE	I	Focus error signal input from the RF amplifier
93	VC	I	Middle point voltage input terminal
94	VSS2	—	Ground terminal
95	FRDR	O	Focus servo drive signal (–) output to the coil/motor drive
96	FFDR	O	Focus setvo drive signal (+) output to the coil/motor drive

Pin No.	Pin Name	I/O	Description
97	TRDR	O	Tracking servo drive signal (–) output to the coil/motor drive
98	TFDR	O	Tracking servo drive signal (+) output to the coil/motor drive
99	SRDR	O	Sled servo drive signal (–) output to the coil/motor drive
100	SFDR	O	Sled servo drive signal (+) output to the coil/motor drive
101	SSTP	I	Disc inner position detection signal input terminal
102	MDS	O	Spindle motor drive signal output terminal Not used
103	MDP	O	Spindle motor servo control signal output to the coil/motor drive
104	C176	O	176.4 kHz clock signal output terminal Not used
105	VDD2	—	Power supply terminal (+3.3V)
106	LRCK	O	L/R sampling clock signal output to the MP3 decoder
107	LRCKI	I	L/R sampling clock signal input from the MP3 decoder
108	PCMD	O	Serial data output to the MP3 decoder
109	PCMDi	I	Serial data input from the MP3 decoder
110	BCK	O	Bit clock signal output to the MP3 decoder
111	BCKI	I	Bit clock signal input from the MP3 decoder
112	DVDD	—	Power supply terminal (+3.3V)
113 to 117	A3 to A0, A10	O	Address signal output to the D-RAM
118	A11	O	Not used
119, 120	TEST3, TEST4	O	Not used

CONTROL BOARD IC801 TMP91CY22FG-5GH6 (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	VREFL	I	Reference voltage input terminal (0V)
2	AVSS	—	Ground terminal
3	AVCC	—	Power supply terminal (+3.3V)
4	RW/ROM	O	CD-ROM/RW or LD on/off selection signal output terminal
5	PWM RF	O	RF offset cancel PWM signal output terminal
6	PWM TE	O	Tracking error offset cancel PWM signal output terminal
7	EEP CSO	O	Chip select signsl output terminal Not used
8	PWM FE	O	Focus error offset cancel PWM signal output terminal
9	LD ON	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
10	K-SEL	O	DNK selection signal input terminal Not used
11	3.3V REG	I	CD voltage detection signal input terminal
12	XRSTO	O	System reset signal output to the CD DSP "L": reset
13	FOKI	I	Focus OK signal input from the CD DSP "L": NG, "H": OK
14	SCORI	I	Subcode sync (S0+S1) detection signal input from the CD DSP
15	GFSI	I	Guard frame sync signal input from the CD DSP "L": NG, "H": OK
16	XLATO	O	Serial data latch pulse output to the CD DSP
17	XSOEO	O	Serial data output enable signal output to CD DSP
18	DATAO	O	Serial data output to the CD DSP
19	SENSIN	I	Internal status (SENSE) signal input from the CD DSP
20	CLKO	O	Serial data transfer clock signal output to the CD DSP
21	R-DATA	O	PLL serial data output terminal
22	R-COUNT	I	PLL serial data input terminal
23	R-CLOCK	O	PLL serial data transfer clock signal output terminal
24	AM0	O	Not used
25	DVCC	—	Power supply terminal (+3.3V)
26	X2	O	System clock output terminal (4.19 MHz)
27	DVSS	—	Ground terminal
28	X1	I	System clock input terminal (4.19 MHz)
29	AM1	O	Not used
30	RESET	I	System reset signal input from the reset signal generator "L": reset
31	SHIFT1	O	Shift point terminal for oscillation frequency change
32	SHIFT2	O	Not used
33, 34	EMU0, EMU1	O	Not used
35	WP	I	Key interruption processing start signal input terminal
36	AC-IN	O	Not used
37	CD DOOR	I	CD lid open/close detection switch input terminal "L": CD lid is close
38	REMOTE	I	Remote control signal input terminal Not used
39	R-MUTE	O	Tuner muting on/off control signal output terminal "L": active
40	R-CE	O	PLL chip enable signal output terminal
41	EEP-SDA	I/O	Two-way serial data bus with the EEPROM
42	EEP-SCL	O	Serial clock signal output terminal to the EEPROM
43	ALE	O	Not used
44 to 51	LCD-AD0 to LCD-AD7	O	LCD serial data output terminal

Pin No.	Pin Name	I/O	Description
52, 53	A, B	I	Jog dial pulse input from the rotary encoder (JOG)
54	NC	O	Not used
55	TEST-A	I	CD automatic adjustment value check mode setting terminal Normally fixed at “H”
56	TEST B	O	Not used
57 to 59	SIMUKE1 to SIMUKE3	I	Destination setting terminal
60	LCD A0	O	LCD data/command select signal output terminal
61	BACKLIGHT	O	LCD back light on/off control signal output terminal “H”: LED ON Noy used
62	DVSS	—	Ground terminal
63	NC	O	Not used
64	DVCC	—	Power supply terminal (+3.3V)
65	P-CON	O	Power control signal output terminal “H”: active
66	RELAY	O	Not used
67	VOL-DATA	O	Serial data output to the electrical volume
68	VOL-CLK	O	Serial data transfer clock signal output to the electrical volume
69	NC	O	Not used
70	LCD-RES	O	LCD system reset signal output terminal “L”: reset
71	NC	O	Not used
72	LCD-WR	O	LCD chip data write signal output terminal
73	COM_CONT	O	Middle voltage (+4.5V) detection signal output for battery middle voltage check
74	CD	O	CD power on/off control signal output terminal “L”: CD on
75	RADIO	O	Tuner power on/off control signal output terminal “L”: tuner on
76	NC	O	Not used
77	A-MUTE	O	Audio muting on/off control signal output terminal “H”: muting
78	NC	O	Not used
79	LCD-CS	O	LCD chip select signal output terminal
80	LOAD	O	Load control signal output for load control circuit
81	M-BASS	O	MEGABASS on/off control signal output terminal
82	NC	O	Not used
83	SDCLKO	O	Serial data transfer clock signal output to the MP3 decoder
84	SDOUT	O	Serial data output to the MP3 decoder
85	SDIN	I	Serial data input from the MP3 decoder
86	RDENI	I	Interrupt status input from the MP3 decoder
87	NRSTO	O	System reset signal output to the MP3 decoder
88	XWAKEO	O	System wake up signal output to the MP3 decoder
89	DVCC	—	Power supply terminal (+3.3V)
90	SDXLATO	O	Chip select signal output to the MP3 decoder
91	DVSS	—	Ground terminal
92	BATT	I	High voltage (+9V) detection signal input for battery check
93	BATT-COM	I	Middle voltage (+4.5V) detection input for battery check
94	VOL-CHECK	I	Not used
95 to 97	KEY0 to KEY2	I	Key input terminal (A/D input)
98, 99	NC	O	Not used
100	VREFH	I	Reference voltage input terminal (+3.3V)

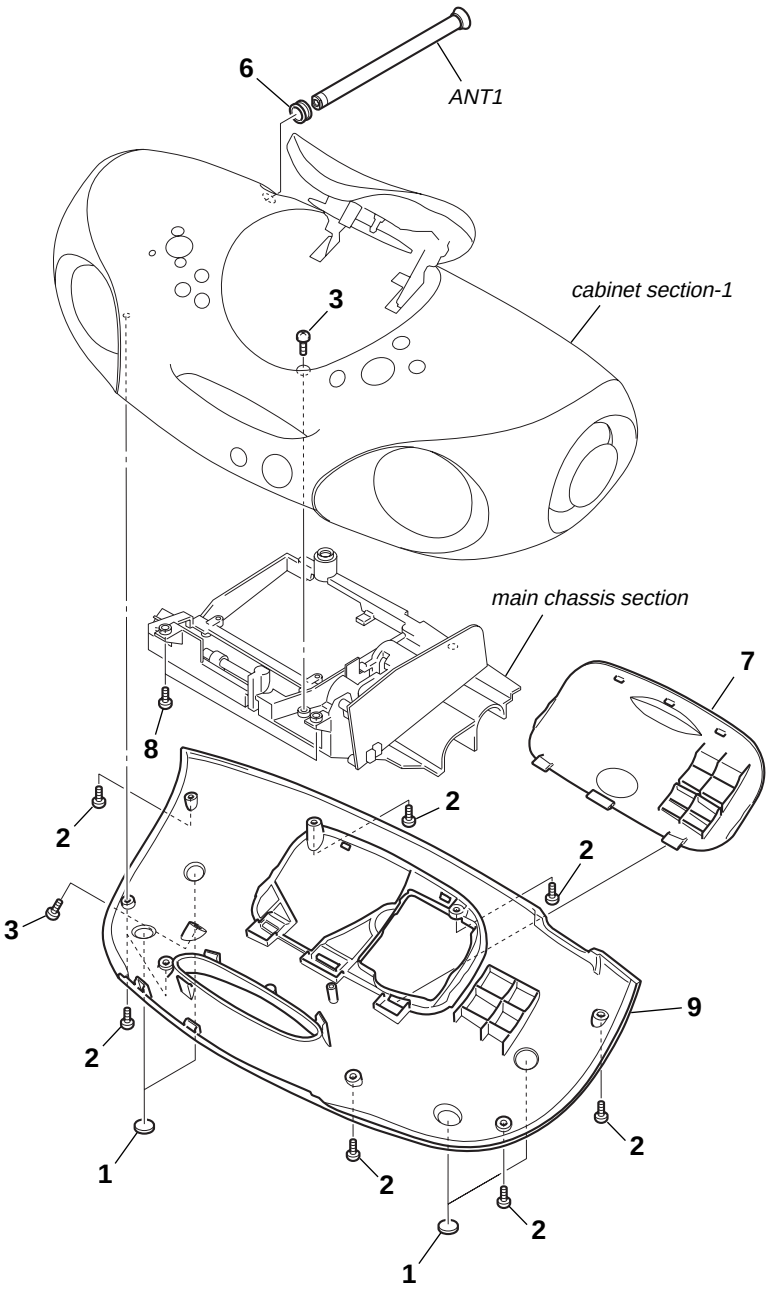
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.
- Abbreviation
  CND : Canadian model
  SP : Singapore model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

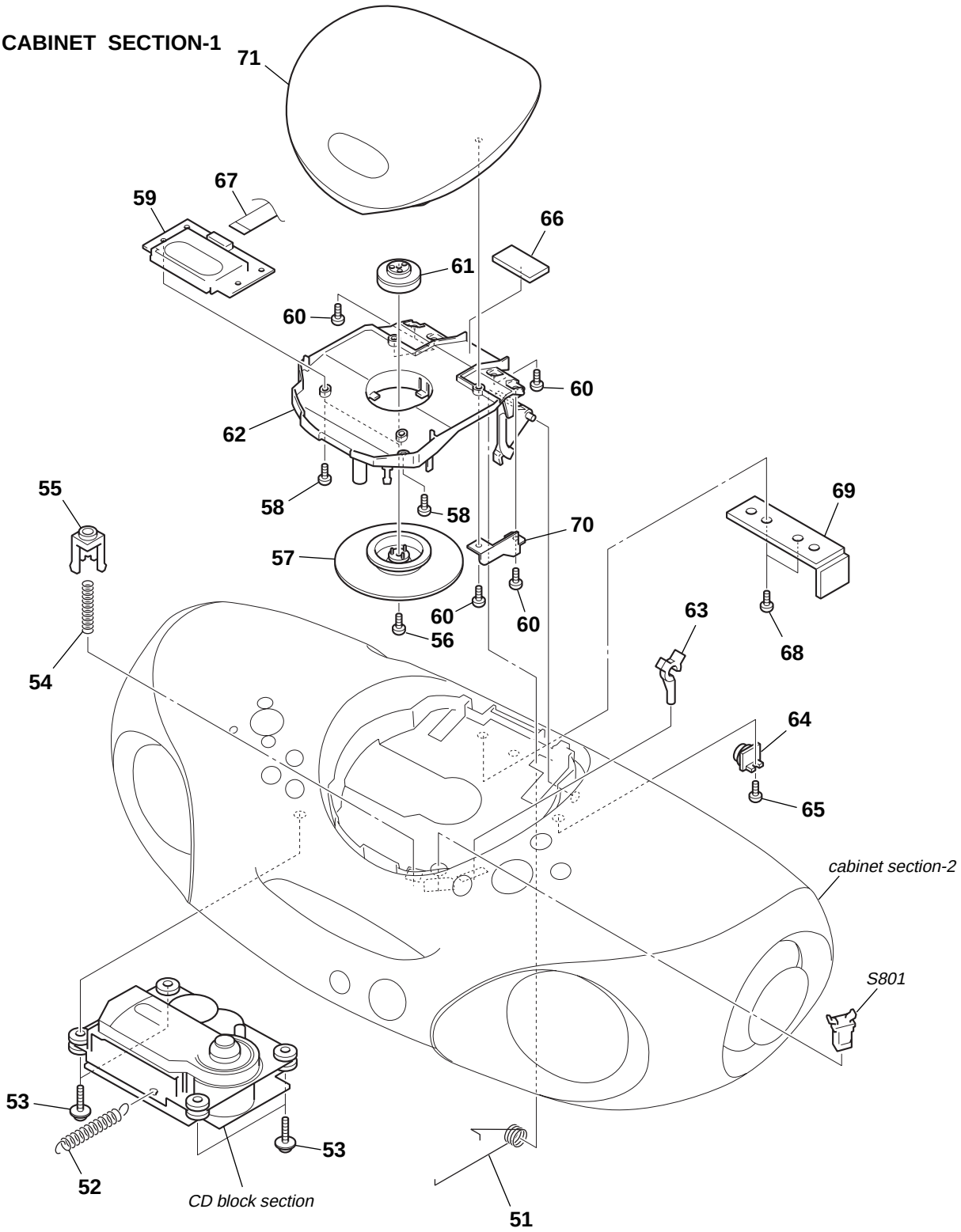
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CABINET (LOWER) SECTION



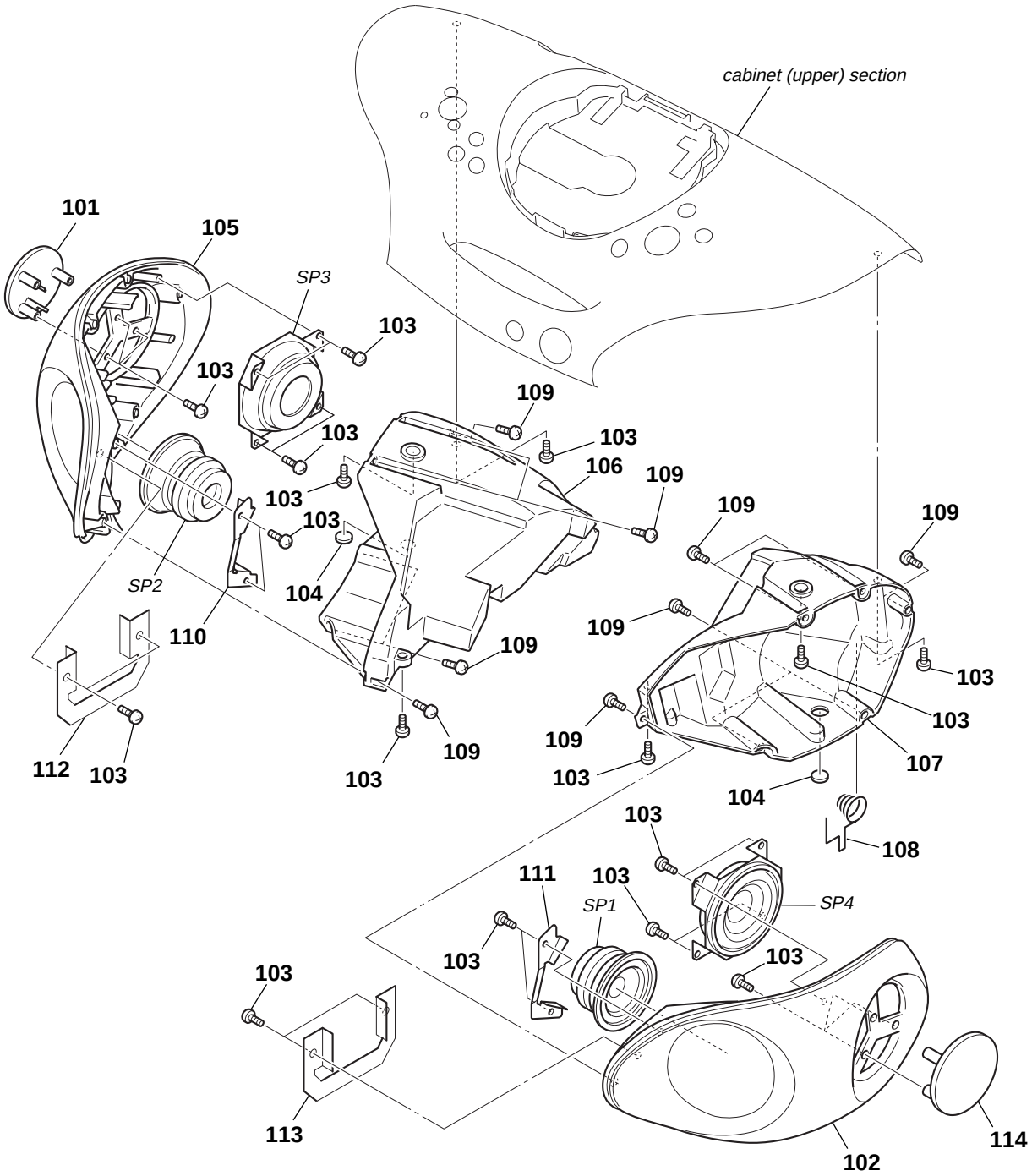
Ref. No.	Part No.	Description	Remark
1	3-262-827-01	FOOT, RUBBER	
2	3-254-145-01	SCREW (B3), (+) BV TAPPING	
3	3-254-150-11	SCREW (M3), (+) P	
6	3-236-233-01	RUBBER, ANTENNA	
7	3-262-581-01	LID, BATTERY CASE	
8	3-254-143-11	SCREW (B3), (+) BV TAPPING	
9	3-262-580-01	CABINET (LOWER)	
ANT1	1-754-313-11	ANTENNA, TELESCOPIC	

6-2. CABINET SECTION-1



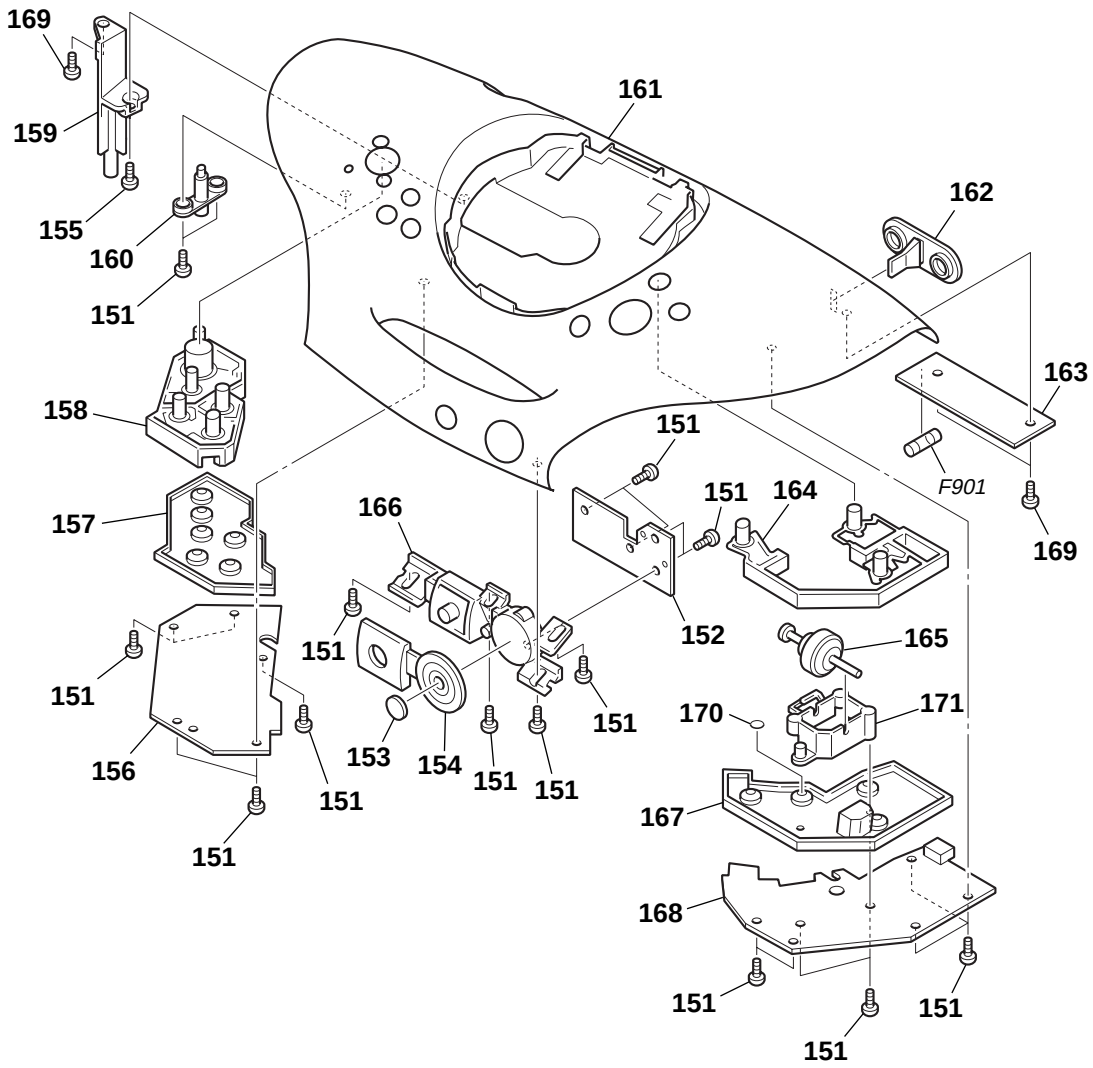
Ref. No.	Part No.	Description	Remark
51	3-263-581-01	SPRING (CD)	
52	3-248-139-01	SPRING (CD), TENSION COIL	
53	3-252-828-01	SCREW (+PWH) B2.6	
54	3-249-379-01	SPRING (SLIDER)	
55	3-249-378-01	SLIDER, PUSH	
56	3-253-143-01	SCREW (B2.6), (+) P TAPPING	
57	3-017-951-02	PLATE, CHUCKING	
58	3-252-827-11	SCREW (B2.6), (+) BV TAPPING	
* 59	A-4547-410-A	LCD BOARD, COMPLETE	
60	3-254-151-01	SCREW (B2.6), (+) P TAPPING	
61	1-452-952-11	MAGNET	
62	3-262-567-01	HOLDER (COVER CD)	
63	3-232-770-01	STOPPER (CD)	
64	3-047-468-31	DUMPER	
65	3-254-143-11	SCREW (B3), (+) BV TAPPING	
66	2-108-160-01	CUSHION (FFC)	
67	1-829-291-11	CABLE, FLEXIBLE FLAT (16 CORE)	
68	3-252-829-01	SCREW (B3), (+) BV TAPPING	
69	2-067-556-01	BRACKET, CD LID	
70	2-108-161-01	BRACKET (A), CD LID	
71	X-2022-944-1	LID SUB ASSY, CD	
S801	1-692-960-11	SWITCH, PUSH (1 KEY) (CD LID OPEN/CLOSE DETECT)	

6-3. CABINET SECTION-2



Ref. No.	Part No.	Description	Remark
101	3-262-560-01	CAP, SPEAKER	
102	X-3385-045-1	CABINET FRONT (R) SUB ASSY	
103	3-254-143-11	SCREW (B3), (+) BV TAPPING	
104	3-262-828-01	RUBBER (SPEAKER)	
105	X-3385-044-1	CABINET FRONT (L) SUB ASSY	
106	3-262-578-01	BOX (L), SPEAKER	
107	3-262-579-01	BOX (R), SPEAKER	
108	3-263-583-01	SPRING (+), BATTERY	
109	3-254-145-01	SCREW (B3), (+) BV TAPPING	
110	2-108-337-01	BRACKET (L) SPEAKER	
111	3-264-720-01	SPEAKER BRACKET (R)	
112	2-102-670-01	BRACKET (SP B) (L)	
113	2-102-671-01	BRACKET (SP B) (R)	
114	2-108-582-01	CAP (R), SPEAKER	
SP1	1-825-736-11	SPEAKER (8cm) (Rch)	
SP2	1-825-736-11	SPEAKER (8cm) (Lch)	
SP3	1-825-737-11	PASSIVE SPEAKER (8cm) (Lch)	
SP4	1-825-737-11	PASSIVE SPEAKER (8cm) (Rch)	

6-4. CABINET (UPPER) SECTION



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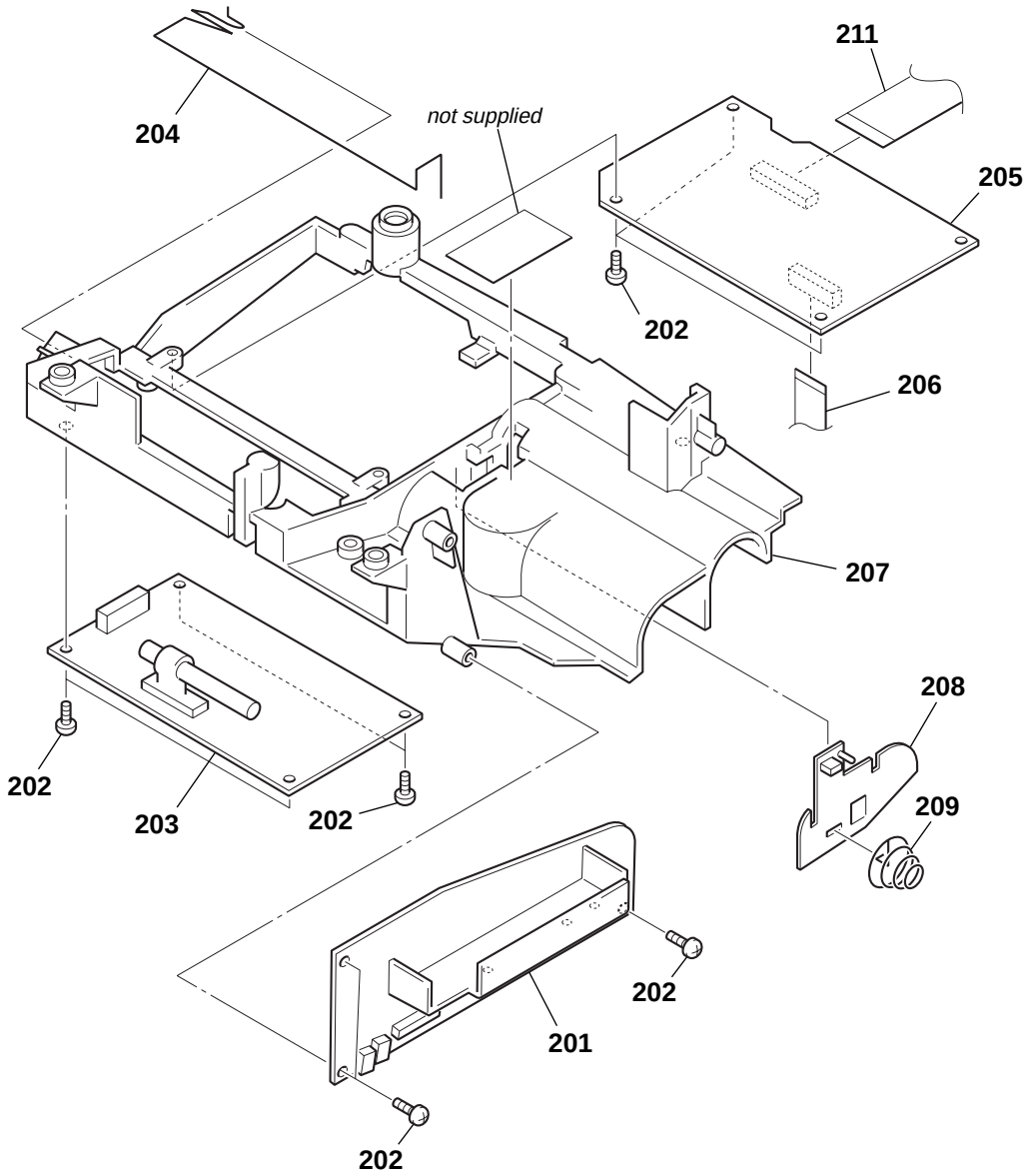
Ref. No.	Part No.	Description	Remark
151	3-254-151-01	SCREW (B2.6), (+) P TAPPING	
* 152	A-4547-419-A	SELECT BOARD, COMPLETE	
153	3-262-574-01	BUTTON (SELECT) (►II)	
154	3-262-825-01	RUBBER (SELECT)	
155	3-252-829-01	SCREW (B3), (+) BV TAPPING	
* 156	A-4547-412-A	POWER BOARD, COMPLETE	
157	3-262-824-01	RUBBER (POWER)	
158	3-262-572-01	BUTTON (POWER) (RADIO, POWER, CD, +, –)	
159	2-108-567-01	HOLDER, GUIDE (CD)	
160	3-262-562-01	LENS (POWER)	
161	3-262-571-01	CABINET (UPPER)	

Ref. No.	Part No.	Description	Remark
162	3-236-226-01	RUBBER, JACK	
* 163	A-4547-420-A	JACK BOARD, COMPLETE	
164	3-262-573-01	BUTTON (MODE) (REPEAT, MODE)	
165	3-262-569-01	KNOB (JOG)	
166	3-262-570-01	HOLDER (SELECT)	
167	3-262-826-01	RUBBER (MODE)	
* 168	A-4547-414-A	MODE BOARD, COMPLETE	
169	3-254-143-11	SCREW (B3), (+) BV TAPPING	
170	2-067-599-01	SHEET (JOG)	
171	3-262-568-01	HOLDER (JOG)	
⚠F901	1-533-449-12	FUSE, GLASS TUBE (DIA. 5) (2A/125V)	

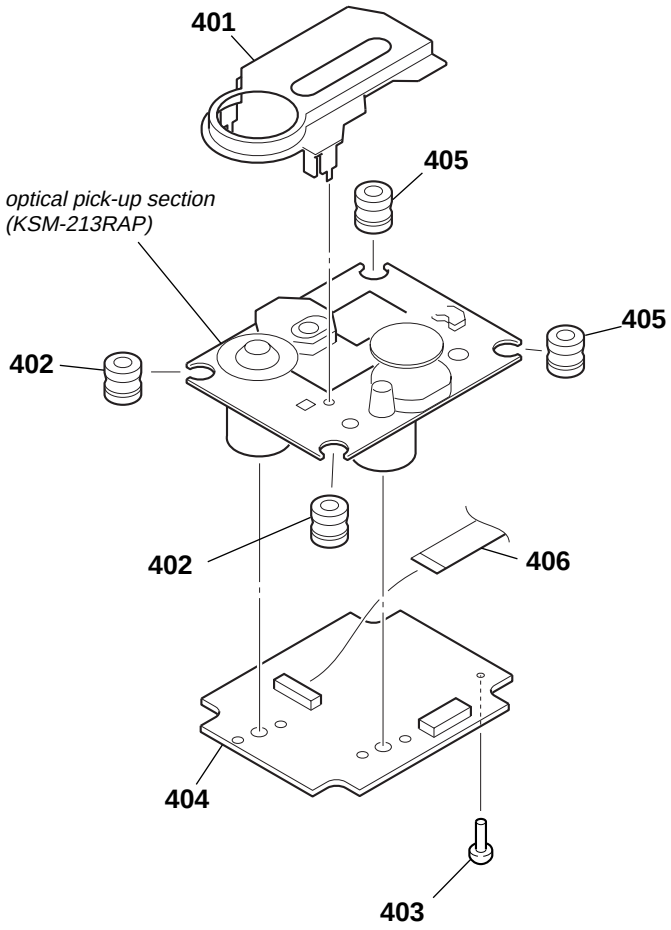
6-5. MAIN CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 201	A-4547-421-A	AUDIO BOARD, COMPLETE	
202	3-254-143-11	SCREW (B3), (+) BV TAPPING	
203	A-1061-499-A	TUNER BOARD, COMPLETE (SP)	
* 203	A-3683-920-A	TUNER BOARD, COMPLETE (US, CND, E)	
204	3-263-580-01	ANTENNA, TERMINAL	
* 205	A-1065-824-A	CONTROL BOARD, COMPLETE (US, CND, E)	

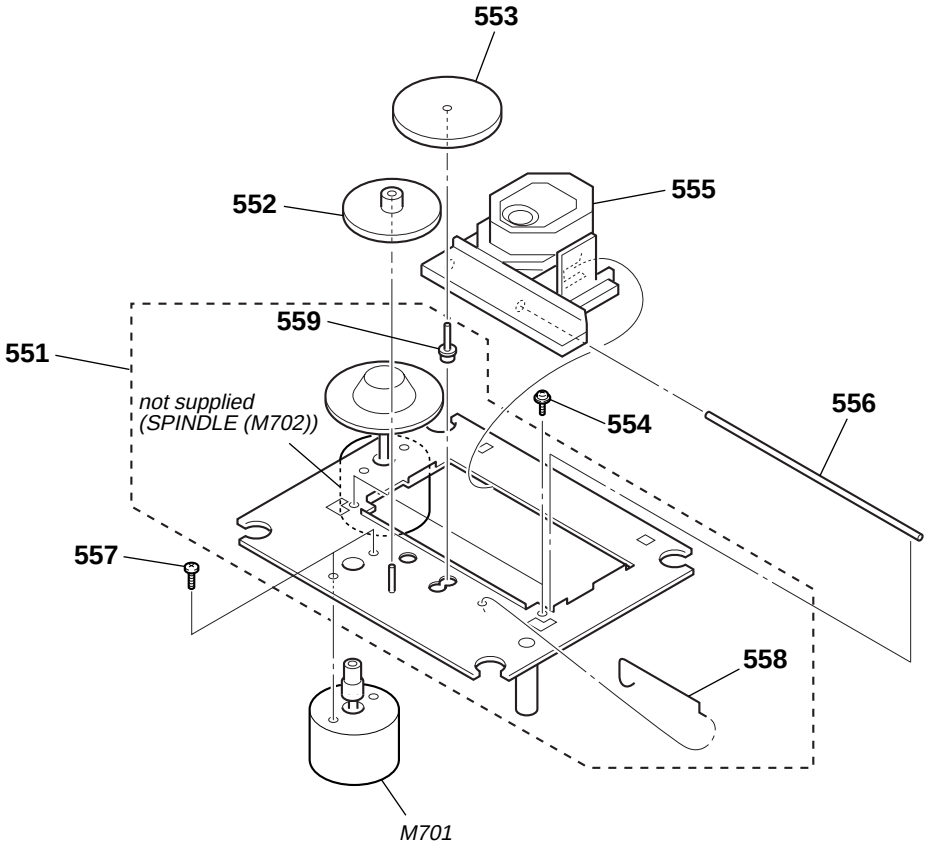
Ref. No.	Part No.	Description	Remark
* 205	A-4547-416-A	CONTROL BOARD, COMPLETE (SP)	
206	1-829-290-11	CABLE, FLEXIBLE FLAT (19 CORE)	
207	3-262-575-01	MAIN, CHASSIS	
* 208	A-4547-424-A	BATTERY BOARD, COMPLETE	
209	3-263-582-01	SPRING (–), BATTERY	
211	1-829-292-11	CABLE, FLEXIBLE FLAT (29 CORE)	

6-6. CD BLOCK SECTION



Ref. No.	Part No.	Description	Remark
401	3-923-736-01	COVER, CD	
402	3-931-379-31	RUBBER, VIBRATION PROOF	
403	3-245-709-51	SCREW	
* 404	A-4547-680-A	CD BOARD, COMPLETE	
405	3-931-379-21	RUBBER, VIBRATION PROOF	
406	1-829-368-11	CABLE, FLEXIBLE FLAT (16 CORE)	

6-7. OPTICAL PICK-UP SECTION (KSM-213RAP)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
551	X-2162-707-2	CHASSIS ASSY (RDP) (RP), MOTOR (including M702 (SPINDLE))	
* 552	2-647-408-02	GEAR (B)	
* 553	2-169-065-01	GEAR (A)	
554	2-169-388-11	TAPPING (M2), +PWB	
⚠555	8-820-161-02	OPTICAL PICK-UP (KSS-213R/C2RP)	
556	2-626-908-01	SHAFT, SLED	
557	2-174-500-01	SCREW (2X3)	
* 558	2-169-385-01	SPRING, SLED	
* 559	2-169-384-01	SHAFT (S), GEAR	
M701	X-2162-712-2	GEAR ASSY (R) (RP), MOTOR (SLED)	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  CND : Canadian model
  SP : Singapore model
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-4547-421-A	AUDIO BOARD, COMPLETE			
		**********			
	3-254-143-11	SCREW (B3), (+) BV TAPPING			
		< CAPACITOR >			
C112	1-126-963-11	ELECT	4.7uF	20%	50V
C122	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C123	1-126-963-11	ELECT	4.7uF	20%	50V
C124	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C125	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C126	1-126-959-11	ELECT	0.47uF	20%	50V
C127	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C131	1-126-963-11	ELECT	4.7uF	20%	50V
C132	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C133	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C134	1-126-947-11	ELECT	47uF	20%	35V
C135	1-126-934-11	ELECT	220uF	20%	16V
C136	1-136-157-00	MYLAR	0.022uF	10%	50V
C137	1-126-927-11	ELECT	2200uF	20%	10V
C138	1-126-957-11	ELECT	0.22uF	20%	50V
C139	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C212	1-126-963-11	ELECT	4.7uF	20%	50V
C222	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C223	1-126-963-11	ELECT	4.7uF	20%	50V
C224	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C225	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C226	1-126-959-11	ELECT	0.47uF	20%	50V
C227	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C231	1-126-963-11	ELECT	4.7uF	20%	50V
C232	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C233	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C234	1-126-947-11	ELECT	47uF	20%	35V
C235	1-126-934-11	ELECT	2200uF	20%	16V
C236	1-136-157-00	MYLAR	0.022uF	10%	50V
C237	1-126-927-11	ELECT	2200uF	20%	10V
C238	1-126-957-11	ELECT	0.22uF	20%	50V
C239	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-126-936-11	ELECT	3300uF	20%	16V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-126-935-11	ELECT	470uF	20%	16V
C306	1-104-665-11	ELECT	100uF	20%	25V
C307	1-104-662-91	ELECT	22uF	20%	25V
C308	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C309	1-104-662-91	ELECT	22uF	20%	25V
C311	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C313	1-126-926-11	ELECT	1000uF	20%	10V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-126-926-11	ELECT	1000uF	20%	10V
C316	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C319	1-126-934-11	ELECT	220uF	20%	16V
C322	1-104-662-91	ELECT	22uF	20%	25V
C325	1-126-947-11	ELECT	47uF	20%	35V
C326	1-126-933-11	ELECT	100uF	20%	16V
C332	1-104-662-91	ELECT	22uF	20%	25V
		< CONNECTOR >			
CNP301	1-784-741-11	CONNECTOR, FFC 19P			
CNP302	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CNP303	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNP304	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CNP306	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D201	8-719-988-61	DIODE 1SS355TE-17			
D301	8-719-988-61	DIODE 1SS355TE-17			
D302	8-719-978-33	DIODE DTZ-TT11-6.8B			
D303	8-719-988-61	DIODE 1SS355TE-17			
D304	8-719-069-55	DIODE UDZSTE-175.6B			
D305	8-719-083-93	DIODE KDS120-RTK			
D321	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC301	6-701-919-01	IC PT2257-S			
IC302	8-759-426-51	IC BA5417			
IC303	8-759-679-43	IC S-816A33AMC-BAI-T2			
		< TRANSISTOR >			
Q121	8-729-905-34	TRANSISTOR 2SC4081-Q			
Q122	8-729-920-31	TRANSISTOR DTC343TK			
Q221	8-729-905-34	TRANSISTOR 2SC4081-Q			
Q222	8-729-920-31	TRANSISTOR DTC343TK			
Q301	8-729-040-76	TRANSISTOR KTA1273-Y-AT			
Q302	8-729-905-34	TRANSISTOR 2SC4081-Q			
Q303	8-729-021-82	TRANSISTOR 2SD2396K			
Q304	8-729-036-86	TRANSISTOR KTC3203Y-AT			

AUDIO **BATTERY** **CD**

Ref. No.	Part No.	Description			Remark
Q305	8-729-028-90	TRANSISTOR	DTA143ZUA-T106		
Q306	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q307	8-729-101-07	TRANSISTOR	2SB798-DL		
Q308	8-729-029-13	TRANSISTOR	DTC143ZUA-T106		
Q309	8-729-052-52	TRANSISTOR	KTC2026Y		
		< RESISTOR >			
R122	1-216-821-11	METAL CHIP	1K	5%	1/10W
R123	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R124	1-216-821-11	METAL CHIP	1K	5%	1/10W
R125	1-216-817-11	METAL CHIP	470	5%	1/10W
R127	1-216-821-11	METAL CHIP	1K	5%	1/10W
R128	1-216-833-11	METAL CHIP	10K	5%	1/10W
R129	1-216-841-11	METAL CHIP	47K	5%	1/10W
R131	1-216-817-11	METAL CHIP	470	5%	1/10W
R132	1-216-813-11	METAL CHIP	220	5%	1/10W
R133	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R134	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R136	1-216-821-11	METAL CHIP	1K	5%	1/10W
R137	1-216-817-11	METAL CHIP	470	5%	1/10W
R222	1-216-821-11	METAL CHIP	1K	5%	1/10W
R223	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R224	1-216-821-11	METAL CHIP	1K	5%	1/10W
R225	1-216-817-11	METAL CHIP	470	5%	1/10W
R227	1-216-821-11	METAL CHIP	1K	5%	1/10W
R228	1-216-833-11	METAL CHIP	10K	5%	1/10W
R229	1-216-841-11	METAL CHIP	47K	5%	1/10W
R231	1-216-817-11	METAL CHIP	470	5%	1/10W
R232	1-216-813-11	METAL CHIP	220	5%	1/10W
R233	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R234	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R236	1-216-821-11	METAL CHIP	1K	5%	1/10W
R237	1-216-817-11	METAL CHIP	470	5%	1/10W
R301	1-216-821-11	METAL CHIP	1K	5%	1/10W
R302	1-216-821-11	METAL CHIP	1K	5%	1/10W
R306	1-216-821-11	METAL CHIP	1K	5%	1/10W
R307	1-216-821-11	METAL CHIP	1K	5%	1/10W
R308	1-216-821-11	METAL CHIP	1K	5%	1/10W
R309	1-216-805-11	METAL CHIP	47	5%	1/10W
R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R311	1-216-833-11	METAL CHIP	10K	5%	1/10W
R313	1-216-841-11	METAL CHIP	47K	5%	1/10W
R314	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R315	1-216-809-11	METAL CHIP	100	5%	1/10W
R316	1-216-833-11	METAL CHIP	10K	5%	1/10W
R317	1-216-833-11	METAL CHIP	10K	5%	1/10W
R318	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R319	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R321	1-216-805-11	METAL CHIP	47	5%	1/10W
R324	1-216-833-11	METAL CHIP	10K	5%	1/10W
R325	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R331	1-216-805-11	METAL CHIP	47	5%	1/10W
R332	1-216-853-11	METAL CHIP	470K	5%	1/10W
R333	1-216-845-11	METAL CHIP	100K	5%	1/10W
R334	1-216-845-11	METAL CHIP	100K	5%	1/10W
R335	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R336	1-216-833-11	METAL CHIP	10K	5%	1/10W

****

Ref. No.	Part No.	Description			Remark
*	A-4547-424-A	BATTERY BOARD, COMPLETE			
		**********			
		< FERRITE BEAD >			
FB901	1-410-397-21	FERRITE	1.1uH		
FB902	1-410-397-21	FERRITE	1.1uH		

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*	A-4547-680-A	CD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C701	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C702	1-104-665-11	ELECT	100uF	20%	25V
C703	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C704	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C705	1-104-665-11	ELECT	100uF	20%	25V
C707	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C708	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C709	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C710	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C711	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C712	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C713	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C714	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C715	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C716	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C717	1-104-665-11	ELECT	100uF	20%	25V
C718	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C719	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C720	1-104-665-11	ELECT	100uF	20%	25V
C721	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C722	1-104-665-11	ELECT	100uF	20%	25V
C723	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C724	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C725	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C726	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C727	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C728	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C729	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C730	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C731	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C732	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C733	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C734	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C735	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C736	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C739	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C740	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C741	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C742	1-104-662-91	ELECT	22uF	20%	25V
C743	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C744	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C745	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C746	1-104-665-11	ELECT	100uF	20%	25V
C747	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C748	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C749	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C750	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C751	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C752	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C753	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C754	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C755	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C756	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C757	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C758	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C759	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C761	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C762	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C763	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C766	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C767	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C768	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C769	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C770	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C771	1-126-934-11	ELECT	220uF	20%	16V
C772	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C773	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C774	1-104-665-11	ELECT	100uF	20%	25V
C775	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C779	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C780	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C781	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C782	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C783	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C784	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C785	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C787	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C788	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C789	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C790	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C791	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C792	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C797	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C798	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C799	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1001	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1002	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1003	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1005	1-104-662-91	ELECT	22uF	20%	25V
		< CONNECTOR >			
CN701	1-770-168-11	CONNECTOR, FFC/FPC 16P			
CN702	1-784-751-11	CONNECTOR, FFC 29P			
		< SHORT >			
FB701	1-216-864-11	SHORT CHIP	0		
FB702	1-216-864-11	SHORT CHIP	0		
FB703	1-216-864-11	SHORT CHIP	0		
FB704	1-216-864-11	SHORT CHIP	0		
FB705	1-216-864-11	SHORT CHIP	0		
FB706	1-216-864-11	SHORT CHIP	0		
FB707	1-216-864-11	SHORT CHIP	0		
FB708	1-216-864-11	SHORT CHIP	0		
FB709	1-216-864-11	SHORT CHIP	0		
FB710	1-216-864-11	SHORT CHIP	0		
FB711	1-216-864-11	SHORT CHIP	0		
FB712	1-216-864-11	SHORT CHIP	0		
		< IC >			
IC701	8-752-106-21	IC	CXA2647N-T4		
IC702	8-752-410-68	IC	CXD3029R		
IC703	8-753-217-11	IC	CXR710160-209R		
IC704	6-705-452-01	IC	BA5946FP-E2		
IC705	6-700-195-01	IC	MSM51V17400F-10TK-FS		
IC706	6-705-310-01	IC	S-T111B15MC-OGATFG		
		< SHORT >			
JC702	1-216-864-11	SHORT CHIP	0		
JC703	1-216-864-11	SHORT CHIP	0		
		< TRANSISTOR >			
Q701	8-729-054-57	TRANSISTOR	KTN2907AS-RTK		
Q702	8-729-029-10	TRANSISTOR	DTC143TUA-T106		
		< RESISTOR >			
R701	1-216-797-11	METAL CHIP	10	5%	1/10W
R702	1-216-837-11	METAL CHIP	22K	5%	1/10W
R703	1-216-833-11	METAL CHIP	10K	5%	1/10W
R704	1-216-837-11	METAL CHIP	22K	5%	1/10W
R705	1-216-833-11	METAL CHIP	10K	5%	1/10W
R706	1-216-849-11	METAL CHIP	220K	5%	1/10W
R707	1-216-845-11	METAL CHIP	100K	5%	1/10W
R708	1-216-864-11	SHORT CHIP	0		
R709	1-216-849-11	METAL CHIP	220K	5%	1/10W
R710	1-216-837-11	METAL CHIP	22K	5%	1/10W
R711	1-216-841-11	METAL CHIP	47K	5%	1/10W
R712	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R713	1-216-833-11	METAL CHIP	10K	5%	1/10W
R714	1-216-841-11	METAL CHIP	47K	5%	1/10W
R715	1-216-837-11	METAL CHIP	22K	5%	1/10W
R716	1-216-821-11	METAL CHIP	1K	5%	1/10W
R717	1-216-833-11	METAL CHIP	10K	5%	1/10W
R718	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R719	1-216-845-11	METAL CHIP	100K	5%	1/10W
R720	1-216-864-11	SHORT CHIP	0		
R721	1-216-845-11	METAL CHIP	100K	5%	1/10W
R722	1-216-864-11	SHORT CHIP	0		
R723	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R724	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R725	1-216-837-11	METAL CHIP	22K	5%	1/10W
R726	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R727	1-216-864-11	SHORT CHIP	0		
R728	1-216-837-11	METAL CHIP	22K	5%	1/10W
R729	1-216-833-11	METAL CHIP	10K	5%	1/10W
R730	1-216-864-11	SHORT CHIP	0		
R731	1-216-833-11	METAL CHIP	10K	5%	1/10W
R732	1-216-837-11	METAL CHIP	22K	5%	1/10W
R733	1-216-841-11	METAL CHIP	47K	5%	1/10W
R734	1-216-837-11	METAL CHIP	22K	5%	1/10W
R735	1-216-864-11	SHORT CHIP	0		

CD CONTROL

Ref. No.	Part No.	Description			Remark
R736	1-216-864-11	SHORT CHIP	0		
R737	1-216-837-11	METAL CHIP	22K	5%	1/10W
R739	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R740	1-216-821-11	METAL CHIP	1K	5%	1/10W
R741	1-216-833-11	METAL CHIP	10K	5%	1/10W
R742	1-216-849-11	METAL CHIP	220K	5%	1/10W
R743	1-216-857-11	METAL CHIP	1M	5%	1/10W
R744	1-216-833-11	METAL CHIP	10K	5%	1/10W
R745	1-216-853-11	METAL CHIP	470K	5%	1/10W
R746	1-216-841-11	METAL CHIP	47K	5%	1/10W
R747	1-216-805-11	METAL CHIP	47	5%	1/10W
R748	1-216-864-11	SHORT CHIP	0		
R749	1-216-805-11	METAL CHIP	47	5%	1/10W
R750	1-216-864-11	SHORT CHIP	0		
R751	1-216-805-11	METAL CHIP	47	5%	1/10W
R752	1-216-864-11	SHORT CHIP	0		
R753	1-216-809-11	METAL CHIP	100	5%	1/10W
R754	1-216-809-11	METAL CHIP	100	5%	1/10W
R755	1-216-809-11	METAL CHIP	100	5%	1/10W
R756	1-216-809-11	METAL CHIP	100	5%	1/10W
R757	1-216-809-11	METAL CHIP	100	5%	1/10W
R758	1-216-809-11	METAL CHIP	100	5%	1/10W
R759	1-216-809-11	METAL CHIP	100	5%	1/10W
R760	1-216-809-11	METAL CHIP	100	5%	1/10W
R761	1-216-857-11	METAL CHIP	1M	5%	1/10W
R762	1-216-864-11	SHORT CHIP	0		
R763	1-216-864-11	SHORT CHIP	0		
R764	1-216-853-11	METAL CHIP	470K	5%	1/10W
R765	1-216-833-11	METAL CHIP	10K	5%	1/10W
R766	1-216-809-11	METAL CHIP	100	5%	1/10W
R767	1-216-809-11	METAL CHIP	100	5%	1/10W
R768	1-216-809-11	METAL CHIP	100	5%	1/10W
R769	1-216-809-11	METAL CHIP	100	5%	1/10W
R770	1-216-809-11	METAL CHIP	100	5%	1/10W
R771	1-216-845-11	METAL CHIP	100K	5%	1/10W
R772	1-216-845-11	METAL CHIP	100K	5%	1/10W
R773	1-216-845-11	METAL CHIP	100K	5%	1/10W
R774	1-216-845-11	METAL CHIP	100K	5%	1/10W
R775	1-216-845-11	METAL CHIP	100K	5%	1/10W
R776	1-216-845-11	METAL CHIP	100K	5%	1/10W
R777	1-216-864-11	SHORT CHIP	0		
R778	1-216-864-11	SHORT CHIP	0		
R779	1-216-864-11	SHORT CHIP	0		
R780	1-216-809-11	METAL CHIP	100	5%	1/10W
R781	1-216-805-11	METAL CHIP	47	5%	1/10W
R782	1-216-805-11	METAL CHIP	47	5%	1/10W
R783	1-216-805-11	METAL CHIP	47	5%	1/10W
R784	1-216-833-11	METAL CHIP	10K	5%	1/10W
R785	1-216-857-11	METAL CHIP	1M	5%	1/10W
R786	1-216-845-11	METAL CHIP	100K	5%	1/10W
R787	1-216-845-11	METAL CHIP	100K	5%	1/10W
R788	1-216-833-11	METAL CHIP	10K	5%	1/10W
R789	1-216-833-11	METAL CHIP	10K	5%	1/10W
R790	1-216-821-11	METAL CHIP	1K	5%	1/10W
R791	1-216-837-11	METAL CHIP	22K	5%	1/10W
R792	1-216-833-11	METAL CHIP	10K	5%	1/10W
R793	1-216-833-11	METAL CHIP	10K	5%	1/10W
R794	1-216-864-11	SHORT CHIP	0		
R795	1-216-864-11	SHORT CHIP	0		
R796	1-216-821-11	METAL CHIP	1K	5%	1/10W
R797	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R798	1-216-821-11	METAL CHIP	1K	5%	1/10W
R799	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1001	1-216-864-11	SHORT CHIP	0		
R1002	1-216-864-11	SHORT CHIP	0		
R1003	1-216-817-11	METAL CHIP	470	5%	1/10W
R1004	1-216-817-11	METAL CHIP	470	5%	1/10W
R1005	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1006	1-216-833-11	METAL CHIP	10K	5%	1/10W
		< SWITCH >			
S701	1-571-936-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X701	1-795-563-21	VIBRATOR, CERAMIC (16.9344MHz)			
X702	1-813-281-21	VIBRATOR, CERAMIC (22.58MHz)			
**********					
*	A-1065-824-A	CONTROL BOARD, COMPLETE (US, CND, E)			
*	A-4547-416-A	CONTROL BOARD, COMPLETE (SP)			
		**********			
		< CAPACITOR >			
C801	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C802	1-104-665-11	ELECT	100uF	20%	25V
C803	1-126-934-11	ELECT	220uF	20%	16V
C804	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C805	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C806	1-104-665-11	ELECT	100uF	20%	25V
C807	1-126-934-11	ELECT	220uF	20%	16V
C808	1-126-934-11	ELECT	220uF	20%	16V
C809	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C810	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C811	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C812	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C813	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C814	1-126-926-11	ELECT	1000uF	20%	10V
C815	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C818	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C819	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C821	1-115-156-11	CERAMIC CHIP	1uF		10V
C822	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C823	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C824	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C825	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C826	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C827	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C828	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C829	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C830	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C831	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C832	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C833	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C834	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C835	1-126-947-11	ELECT	47uF	20%	35V

Ref. No.	Part No.	Description			Remark
C836	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C837	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C838	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C839	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C840	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C841	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C842	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C843	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C844	1-164-361-11	CERAMIC CHIP	0.047uF		25V
C845	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C846	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C847	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C848	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C849	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C850	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C851	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C852	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C853	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C854	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C855	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C856	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C857	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C858	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C859	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C860	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C861	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C862	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C863	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C864	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C866	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C867	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C869	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C873	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C874	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C875	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C876	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C877	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C878	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C879	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C880	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C881	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C882	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
		< CONNECTOR >			
* CNP603	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
* CNP801	1-784-751-11	CONNECTOR, FFC 29P			
* CNP802	1-784-738-11	CONNECTOR, FFC 16P			
CNP803	1-784-741-11	CONNECTOR, FFC 19P			
* CNP804	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< DIODE >			
D802	8-719-988-61	DIODE 1SS355TE-17			
D803	8-719-983-66	DIODE MTZJ-T-72-3.6B			
D804	8-719-988-61	DIODE 1SS355TE-17			
		< FERRITE BEAD >			
FB805	1-410-397-21	FERRITE	1.1uH		

Ref. No.	Part No.	Description			Remark
		< IC >			
IC801	6-804-420-02	IC TMP91CY22FG-5GH6			
IC802	6-706-338-01	IC XC6202P332FR			
IC803	6-703-224-01	IC S-80828CNNB-B8NT2G			
IC804	8-759-643-58	IC BR24C01AF-W			
		< COIL/SHORT >			
L801	1-410-521-11	INDUCTOR	100uH		
L802	1-414-142-11	INDUCTOR	1uH		
L803	1-414-142-11	INDUCTOR	1uH		
L807	1-216-864-11	SHORT CHIP	0		
		< TRANSISTOR >			
Q101	8-729-920-31	TRANSISTOR	DTC343TK		
Q102	8-729-920-31	TRANSISTOR	DTC343TK		
Q103	8-729-029-10	TRANSISTOR	DTC143TUA-T106		
Q201	8-729-920-31	TRANSISTOR	DTC343TK		
Q202	8-729-920-31	TRANSISTOR	DTC343TK		
Q203	8-729-029-10	TRANSISTOR	DTC143TUA-T106		
Q802	8-729-905-34	TRANSISTOR	2SC4081-Q		
Q803	8-729-037-13	TRANSISTOR	KTA1271Y		
Q804	8-729-028-77	TRANSISTOR	DTA115EUA-T106		
Q805	8-729-029-00	TRANSISTOR	DTC115EUA-T106		
Q806	8-729-028-76	TRANSISTOR	DTA114YUA-T106		
Q807	8-729-028-76	TRANSISTOR	DTA114YUA-T106		
Q808	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q809	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q810	8-729-029-00	TRANSISTOR	DTC115EUA-T106		
Q811	8-729-905-34	TRANSISTOR	2SC4081-Q		
Q812	8-729-905-34	TRANSISTOR	2SC4081-Q		
Q813	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q814	8-729-028-76	TRANSISTOR	DTA114YUA-T106		
Q815	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q818	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
		< RESISTOR >			
R102	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R103	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R104	1-216-821-11	METAL CHIP	1K	5%	1/10W
R202	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R203	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R204	1-216-821-11	METAL CHIP	1K	5%	1/10W
R651	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R654	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R655	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (SP)
R656	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (EXCEPT SP)
R801	1-216-821-11	METAL CHIP	1K	5%	1/10W
R802	1-216-841-11	METAL CHIP	47K	5%	1/10W
R803	1-216-841-11	METAL CHIP	47K	5%	1/10W
R804	1-216-821-11	METAL CHIP	1K	5%	1/10W
R805	1-216-821-11	METAL CHIP	1K	5%	1/10W
R806	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R807	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R808	1-216-821-11	METAL CHIP	1K	5%	1/10W
R809	1-216-821-11	METAL CHIP	1K	5%	1/10W
R810	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

CONTROL | JACK

Ref. No.	Part No.	Description			Remark
R811	1-216-805-11	METAL CHIP	47	5%	1/10W
R812	1-216-821-11	METAL CHIP	1K	5%	1/10W
R813	1-216-821-11	METAL CHIP	1K	5%	1/10W
R814	1-216-833-11	METAL CHIP	10K	5%	1/10W
R815	1-216-833-11	METAL CHIP	10K	5%	1/10W
R816	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R817	1-216-813-11	METAL CHIP	220	5%	1/10W
R818	1-216-821-11	METAL CHIP	1K	5%	1/10W
R819	1-216-821-11	METAL CHIP	1K	5%	1/10W
R820	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R821	1-216-821-11	METAL CHIP	1K	5%	1/10W
R822	1-216-821-11	METAL CHIP	1K	5%	1/10W
R823	1-216-813-11	METAL CHIP	220	5%	1/10W
R824	1-216-833-11	METAL CHIP	10K	5%	1/10W
R825	1-216-821-11	METAL CHIP	1K	5%	1/10W
R826	1-216-821-11	METAL CHIP	1K	5%	1/10W
R827	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R828	1-216-821-11	METAL CHIP	1K	5%	1/10W
R829	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R830	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R831	1-216-821-11	METAL CHIP	1K	5%	1/10W
R832	1-216-833-11	METAL CHIP	10K	5%	1/10W
R833	1-216-821-11	METAL CHIP	1K	5%	1/10W
R834	1-216-813-11	METAL CHIP	220	5%	1/10W
R835	1-216-821-11	METAL CHIP	1K	5%	1/10W
R836	1-216-821-11	METAL CHIP	1K	5%	1/10W
R837	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R838	1-216-821-11	METAL CHIP	1K	5%	1/10W
R839	1-216-837-11	METAL CHIP	22K	5%	1/10W
R840	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R841	1-216-821-11	METAL CHIP	1K	5%	1/10W
R842	1-216-821-11	METAL CHIP	1K	5%	1/10W
R843	1-216-821-11	METAL CHIP	1K	5%	1/10W
R844	1-216-821-11	METAL CHIP	1K	5%	1/10W
R845	1-216-841-11	METAL CHIP	47K	5%	1/10W
R846	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R847	1-216-821-11	METAL CHIP	1K	5%	1/10W
R848	1-216-821-11	METAL CHIP	1K	5%	1/10W
R849	1-216-841-11	METAL CHIP	47K	5%	1/10W
R850	1-216-821-11	METAL CHIP	1K	5%	1/10W
R851	1-216-821-11	METAL CHIP	1K	5%	1/10W
R852	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R853	1-216-837-11	METAL CHIP	22K	5%	1/10W
R854	1-216-841-11	METAL CHIP	47K	5%	1/10W
R855	1-216-845-11	METAL CHIP	100K	5%	1/10W
R856	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R857	1-216-841-11	METAL CHIP	47K	5%	1/10W
R858	1-216-821-11	METAL CHIP	1K	5%	1/10W
R859	1-216-845-11	METAL CHIP	100K	5%	1/10W
R860	1-216-841-11	METAL CHIP	47K	5%	1/10W
R861	1-216-821-11	METAL CHIP	1K	5%	1/10W
R862	1-216-821-11	METAL CHIP	1K	5%	1/10W
R863	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R866	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R867	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R868	1-216-821-11	METAL CHIP	1K	5%	1/10W
R869	1-216-841-11	METAL CHIP	47K	5%	1/10W
R870	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R871	1-216-813-11	METAL CHIP	220	5%	1/10W
R872	1-216-797-11	METAL CHIP	10	5%	1/10W
R874	1-216-821-11	METAL CHIP	1K	5%	1/10W
R875	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R876	1-216-845-11	METAL CHIP	100K	5%	1/10W
R877	1-216-821-11	METAL CHIP	1K	5%	1/10W
R878	1-216-821-11	METAL CHIP	1K	5%	1/10W
R879	1-216-845-11	METAL CHIP	100K	5%	1/10W
R880	1-216-821-11	METAL CHIP	1K	5%	1/10W
R881	1-216-833-11	METAL CHIP	10K	5%	1/10W
R882	1-216-821-11	METAL CHIP	1K	5%	1/10W
R883	1-216-821-11	METAL CHIP	1K	5%	1/10W
R884	1-216-841-11	METAL CHIP	47K	5%	1/10W
R885	1-216-821-11	METAL CHIP	1K	5%	1/10W
R886	1-216-821-11	METAL CHIP	1K	5%	1/10W
R887	1-216-821-11	METAL CHIP	1K	5%	1/10W
R888	1-216-821-11	METAL CHIP	1K	5%	1/10W
R889	1-216-821-11	METAL CHIP	1K	5%	1/10W
R891	1-216-821-11	METAL CHIP	1K	5%	1/10W
R892	1-216-821-11	METAL CHIP	1K	5%	1/10W
R893	1-216-821-11	METAL CHIP	1K	5%	1/10W
R894	1-216-809-11	METAL CHIP	100	5%	1/10W
R895	1-216-809-11	METAL CHIP	100	5%	1/10W
R896	1-216-809-11	METAL CHIP	100	5%	1/10W
R897	1-216-821-11	METAL CHIP	1K	5%	1/10W
R898	1-216-821-11	METAL CHIP	1K	5%	1/10W
R899	1-216-821-11	METAL CHIP	1K	5%	1/10W
R901	1-216-833-11	METAL CHIP	10K	5%	1/10W
R902	1-216-833-11	METAL CHIP	10K	5%	1/10W
		< VIBRATOR >			
X801	1-795-865-21	VIBRATOR, CERAMIC (4.19MHz)			
**********					
*	A-4547-420-A	JACK BOARD, COMPLETE			
		**********			
	1-533-233-31	FUSE HOLDER			
		< CAPACITOR >			
C901	1-136-165-00	FILM	0.1uF	5%	50V
		< DIODE >			
D901	8-719-063-79	DIODE 1N4002B			
		< FERRITE BEAD >			
FB301	1-410-397-21	FERRITE	1.1uH		
		< JACK >			
J301	1-815-325-11	JACK (🎧)			
J901	1-778-380-11	JACK, DC (POLARITY UNIFIED TYPE)			(DC IN 9V)
		< COIL >			
L101	1-410-750-41	INDUCTOR	0.47uH		
L201	1-410-750-41	INDUCTOR	0.47uH		

Ref. No.	Part No.	Description			Remark
L301	1-414-142-11	INDUCTOR	1uH		
		< RESISTOR >			
R139	1-216-813-11	METAL CHIP	220	5%	1/10W
R239	1-216-813-11	METAL CHIP	220	5%	1/10W
**********					
*	A-4547-410-A	LCD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C401	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C402	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C403	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C404	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C405	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C406	1-115-156-11	CERAMIC CHIP	1uF		10V
C407	1-115-156-11	CERAMIC CHIP	1uF		10V
C408	1-115-156-11	CERAMIC CHIP	1uF		10V
C409	1-104-662-91	ELECT	22uF	20%	25V
		< CONNECTOR >			
* CNP401	1-784-738-11	CONNECTOR, FFC 16P			
		< LED >			
D401	6-500-076-01	LED SLI-343YC (LCD BACK LIGHT)			
D402	6-500-076-01	LED SLI-343YC (LCD BACK LIGHT)			
		< COIL >			
L401	1-410-521-11	INDUCTOR	100uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD401	1-478-529-11	ELEMENT UNIT, LIQUID CRYSTAL I			
		< RESISTOR >			
R401	1-216-813-11	METAL CHIP	220	5%	1/10W
R402	1-216-813-11	METAL CHIP	220	5%	1/10W
R403	1-216-845-11	METAL CHIP	100K	5%	1/10W
R404	1-216-845-11	METAL CHIP	100K	5%	1/10W
R405	1-216-845-11	METAL CHIP	100K	5%	1/10W
R406	1-216-845-11	METAL CHIP	100K	5%	1/10W
R407	1-216-813-11	METAL CHIP	220	5%	1/10W
R408	1-216-864-11	SHORT CHIP	0		
R409	1-216-813-11	METAL CHIP	220	5%	1/10W
R410	1-216-864-11	SHORT CHIP	0		
R411	1-216-809-11	METAL CHIP	100	5%	1/10W
R412	1-216-809-11	METAL CHIP	100	5%	1/10W
R413	1-216-821-11	METAL CHIP	1K	5%	1/10W
R414	1-216-821-11	METAL CHIP	1K	5%	1/10W
R415	1-216-813-11	METAL CHIP	220	5%	1/10W
R416	1-216-813-11	METAL CHIP	220	5%	1/10W
R417	1-216-809-11	METAL CHIP	100	5%	1/10W
R418	1-216-809-11	METAL CHIP	100	5%	1/10W
R419					
**********					

Ref. No.	Part No.	Description			Remark
*	A-4547-414-A	MODE BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C623	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C624	1-162-974-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CNP601	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
		< RESISTOR >			
R604	1-216-817-11	METAL CHIP	470	5%	1/10W
R605	1-216-821-11	METAL CHIP	1K	5%	1/10W
R606	1-216-821-11	METAL CHIP	1K	5%	1/10W
R613	1-216-813-11	METAL CHIP	220	5%	1/10W
R614	1-216-821-11	METAL CHIP	1K	5%	1/10W
R621	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S606	1-786-050-21	SWITCH, KEY BOARD (DSPL)			
S607	1-786-050-21	SWITCH, KEY BOARD (REPEAT)			
S608	1-786-050-21	SWITCH, KEY BOARD (MODE)			
S611	1-786-050-21	SWITCH, KEY BOARD (ENT)			
S612	1-478-528-11	ENCODER (ROTARY) (JOG)			
**********					
*	A-4547-412-A	POWER BOARD, COMPLETE			
		**********			
		< LED >			
D601	6-500-668-01	LED SLA-360LT3F (OPR/BATT)			
		< SHORT >			
JC601	1-216-864-11	SHORT CHIP	0		
JC602	1-216-864-11	SHORT CHIP	0		
JC603	1-216-864-11	SHORT CHIP	0		
JC604	1-216-864-11	SHORT CHIP	0		
JC605	1-216-864-11	SHORT CHIP	0		
JC606	1-216-864-11	SHORT CHIP	0		
		< RESISTOR >			
R601	1-216-817-11	METAL CHIP	470	5%	1/10W
R602	1-216-821-11	METAL CHIP	1K	5%	1/10W
R603	1-216-821-11	METAL CHIP	1K	5%	1/10W
R607	1-216-813-11	METAL CHIP	220	5%	1/10W
R617	1-216-813-11	METAL CHIP	220	5%	1/10W
R618	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R625	1-216-817-11	METAL CHIP	470	5%	1/10W
R626	1-216-821-11	METAL CHIP	1K	5%	1/10W
R627	1-216-817-11	METAL CHIP	470	5%	1/10W
R628	1-216-821-11	METAL CHIP	1K	5%	1/10W
R630	1-216-821-11	METAL CHIP	1K	5%	1/10W
R631	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
		< SWITCH >			
S601	1-786-050-21	SWITCH, KEY BOARD (POWER)			
S602	1-786-050-21	SWITCH, KEY BOARD (CD)			

POWER SELECT TUNER

Ref. No.	Part No.	Description			Remark
S603	1-786-050-21	SWITCH, KEY BOARD (RADIO, BAND, AUTO PRESET)			
S604	1-786-050-21	SWITCH, KEY BOARD (MEGABASS)			
S605	1-786-050-21	SWITCH, KEY BOARD (VOL +)			
S614	1-786-050-21	SWITCH, KEY BOARD (VOL –)			
**********					
* A-4547-419-A		SELECT BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CNP602	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< RESISTOR >			
R609	1-216-821-11	METAL CHIP	1K	5% 1/10W	
R610	1-216-817-11	METAL CHIP	470	5% 1/10W	
R611	1-216-825-11	METAL CHIP	2.2K	5% 1/10W	
R612	1-216-825-11	METAL CHIP	2.2K	5% 1/10W	
R616	1-216-813-11	METAL CHIP	220	5% 1/10W	
R619	1-216-821-11	METAL CHIP	1K	5% 1/10W	
R620	1-216-821-11	METAL CHIP	1K	5% 1/10W	
		< SWITCH >			
S610	1-786-050-21	SWITCH, KEY BOARD (■)			
S613	1-771-734-11	SWITCH, TACTILE (▶II, 🗀/TUNE +/–, PRESET I◀◀/▶▶I)			
**********					
A-1061-499-A		TUNER BOARD, COMPLETE (SP)			
* A-3683-920-A		TUNER BOARD, COMPLETE (US, CND, E)			
		**********			
		< CAPACITOR >			
C1	1-162-923-11	CERAMIC CHIP	47PF	5% 50V	
C4	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C7	1-162-910-11	CERAMIC CHIP	5PF	0.25PF 50V	
C8	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C9	1-162-915-11	CERAMIC CHIP	10PF	0.5PF 50V	
C10	1-126-960-11	ELECT	1uF	20% 50V	
C11	1-107-826-11	CERAMIC CHIP	0.1uF	10% 16V	
C12	1-126-963-11	ELECT	4.7uF	20% 50V	
C13	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V (EXCEPT SP)	
C14	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V (SP)	
C14	1-164-227-11	CERAMIC CHIP	0.022uF	10% 25V (EXCEPT SP)	
C15	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V (SP)	
C15	1-164-227-11	CERAMIC CHIP	0.022uF	10% 25V (EXCEPT SP)	
C18	1-126-934-11	ELECT	220uF	20% 16V	
C20	1-107-826-11	CERAMIC CHIP	0.1uF	10% 16V	
C21	1-126-960-11	ELECT	1uF	20% 50V	
C22	1-107-826-11	CERAMIC CHIP	0.1uF	10% 16V	
C23	1-126-960-11	ELECT	1uF	20% 50V	
C24	1-162-960-11	CERAMIC CHIP	220PF	10% 50V	
C26	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C27	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	

Ref. No.	Part No.	Description			Remark
C29	1-104-665-11	ELECT	100uF	20% 25V	
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C31	1-162-919-11	CERAMIC CHIP	22PF	5% 50V	
C32	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C33	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C37	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C39	1-107-826-11	CERAMIC CHIP	0.1uF	10% 16V	
C41	1-164-230-11	CERAMIC CHIP	220PF	5% 50V	
C42	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C43	1-162-919-11	CERAMIC CHIP	22PF	5% 50V	
C47	1-162-915-11	CERAMIC CHIP	10PF	0.5PF 50V	
C49	1-161-051-00	CERAMIC	0.01uF	10% 25V	
C51	1-162-919-11	CERAMIC CHIP	22PF	5% 50V	
C52	1-162-915-11	CERAMIC CHIP	10PF	0.5PF 50V	
C53	1-136-169-00	FILM	0.22uF	5% 50V	
C54	1-126-934-11	ELECT	220uF	20% 16V	
C55	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C56	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C57	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C59	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C60	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C61	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C62	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C63	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C65	1-126-963-11	ELECT	4.7uF	20% 50V	
C66	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C68	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	
C77	1-162-968-11	CERAMIC CHIP	0.0047uF	10% 50V (SP)	
C78	1-162-968-11	CERAMIC CHIP	0.0047uF	10% 50V (SP)	
C80	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C95	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C99	1-127-868-21	CERAMIC	2200PF	10% 50V (EXCEPT SP)	
		< FILTER >			
CF2	1-760-235-81	FILTER, CERAMIC			
CF4	1-781-962-21	FILTER, CERAMIC			
		< CONNECTOR >			
* CNP1	1-785-663-11	PIN, CONNECTOR (PC BOARD) 11P			
		< TRIMMER >			
CT1	1-141-442-91	CAP, CERAMIC TRIMMER			
CT3	1-141-304-21	CAP, CERAMIC TRIMMER			
		< DIODE >			
D1	8-719-078-48	DIODE KV1471ETR1-3			
D2	8-719-078-48	DIODE KV1471ETR1-3			
D3	8-719-050-69	DIODE KV1520N			
D10	8-719-988-61	DIODE 1SS355TE-17			
D11	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC1	6-700-512-01	IC TA2149BN			

TUNER

Ref. No.	Part No.	Description			Remark
IC2	8-759-483-40	IC LC72137M-TLM-E			
		< SHORT >			
JC1	1-216-864-11	SHORT CHIP	0		
JC2	1-216-864-11	SHORT CHIP	0		
JC3	1-216-864-11	SHORT CHIP	0		
JC4	1-216-864-11	SHORT CHIP	0		
JC5	1-216-864-11	SHORT CHIP	0		
JC6	1-216-864-11	SHORT CHIP	0		
JC11	1-216-864-11	SHORT CHIP	0		
JC12	1-216-864-11	SHORT CHIP	0		
JC13	1-216-864-11	SHORT CHIP	0		
JC24	1-216-864-11	SHORT CHIP	0 (SP)		
JC33	1-216-864-11	SHORT CHIP	0		
JC34	1-216-864-11	SHORT CHIP	0		
		< COIL >			
L1	1-409-775-11	COIL, AIR-CORE			
L2	1-416-509-11	COIL, AIR-CORE			
L3	1-754-117-12	ANTENNA, FERRITE-ROD (MW)			
L4	1-411-234-21	COIL, AM OSC			
L11	1-414-142-11	INDUCTOR	1uH (EXCEPT SP)		
L21	1-410-509-11	INDUCTOR	10uH		
		< RESISTOR >			
R1	1-216-815-11	METAL CHIP	330	5%	1/10W
R2	1-216-817-11	METAL CHIP	470	5%	1/10W
R3	1-216-833-11	METAL CHIP	10K	5%	1/10W
R4	1-216-833-11	METAL CHIP	10K	5%	1/10W
R10	1-216-805-11	METAL CHIP	47	5%	1/10W
R11	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R13	1-216-821-11	METAL CHIP	1K	5%	1/10W
R24	1-216-813-11	METAL CHIP	220	5%	1/10W
R30	1-216-835-11	METAL CHIP	15K	5%	1/10W
R31	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R32	1-216-845-11	METAL CHIP	100K	5%	1/10W
R40	1-216-849-11	METAL CHIP	220K	5%	1/10W
R41	1-216-833-11	METAL CHIP	10K	5%	1/10W
R50	1-216-821-11	METAL CHIP	1K	5%	1/10W
R51	1-216-833-11	METAL CHIP	10K	5%	1/10W
R52	1-216-864-11	SHORT CHIP	0		
R53	1-216-835-11	METAL CHIP	15K	5%	1/10W
R54	1-216-817-11	METAL CHIP	470	5%	1/10W
R56	1-216-815-11	METAL CHIP	330	5%	1/10W
R58	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R59	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R60	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R61	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R63	1-216-833-11	METAL CHIP	10K	5%	1/10W
R65	1-216-833-11	METAL CHIP	10K	5%	1/10W
R91	1-216-813-11	METAL CHIP	220	5%	1/10W
R92	1-216-813-11	METAL CHIP	220	5%	1/10W
R94	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< TRANSFORMER >			
T1	1-433-741-11	TRANSFORMER, IF			
T2	1-419-465-11	COIL (DET)			

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X1	1-795-449-11	VIBRATOR, CRYSTAL (75kHz)	
**********			
		MISCELLANEOUS	
		**********	
61	1-452-952-11	MAGNET	
67	1-829-291-11	CABLE, FLEXIBLE FLAT (16 CORE)	
206	1-829-290-11	CABLE, FLEXIBLE FLAT (19 CORE)	
211	1-829-292-11	CABLE, FLEXIBLE FLAT (29 CORE)	
406	1-829-368-11	CABLE, FLEXIBLE FLAT (16 CORE)	
⚠555	8-820-161-02	OPTICAL PICK-UP (KSS-213R/C2RP)	
ANT1	1-754-313-11	ANTENNA, TELESCOPIC	
⚠F901	1-533-449-12	FUSE, GLASS TUBE (DIA. 5) (2A/125V)	
M701	X-2162-712-2	GEAR ASSY (R) (RP), MOTOR (SLED)	
S801	1-692-960-11	SWITCH, PUSH (1 KEY)	(CD LID OPEN/CLOSE DETECT)
SP1	1-825-736-11	SPEAKER (8cm) (Rch)	
SP2	1-825-736-11	SPEAKER (8cm) (Lch)	
SP3	1-825-737-11	PASSIVE SPEAKER (8cm) (Lch)	
SP4	1-825-737-11	PASSIVE SPEAKER (8cm) (Rch)	
**********			
		ACCESSORIES	
		**********	
⚠	1-477-692-11	ADAPTOR, AC (AC-X3CP) (US, CND, E)	
⚠	1-477-693-21	ADAPTOR, AC (AC-X3CP) (SP)	
	1-543-798-31	FILTER, CLAMP (FERRITE CORE) (US)	
	3-266-691-11	MANUAL, INSTRUCTION (ENGLISH)	(US, CND, E)
	3-266-691-21	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-266-691-31	MANUAL, INSTRUCTION (SPANISH) (E)	
	3-266-691-41	MANUAL, INSTRUCTION (ENGLISH, SPANISH)	(SP)
	3-266-692-11	MANUAL, INSTRUCTION (ENGLISH)	(US, CND, E)
	3-266-692-21	MANUAL, INSTRUCTION (SonicStage Ver.2.0)	(FRENCH) (CND)
	3-266-692-31	MANUAL, INSTRUCTION (SonicStage Ver.2.0)	(SPANISH) (E)
	3-266-692-41	MANUAL, INSTRUCTION (SonicStage Ver.2.0)	(ENGLISH, SPANISH) (SP)
	X-3384-859-3	CD-ROM (APPLICATION) ASSY (2.0)	(US, CND)
	X-3384-861-3	CD-ROM (APPLICATION) ASSY (2.0) (SP)	
	X-3384-862-3	CD-ROM (APPLICATION) ASSY (2.0) (E)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2004.04	New
1.1	2004.12	Addition of Part No. for Ref. No. 71 on EXPLODED VIEWS (SPM-04160)